

87007 SEARCH REQUEST FORM

Access DB#

Scientific and Technical Information Center

Requester's Full Name: 12 GITOMER Examiner #: 69630 Date: 2/24/03
 Art Unit: 1651 Phone Number 308-0732 Serial Number: 09/554,992
 Mail Box and Bldg/Room Location: 11B01 Results Format Preferred (circle): PAPER DISK E-MAIL
LEDIT

If more than one search is submitted, please prioritize searches in order of need.

 Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: _____
 Inventors (please provide full names): _____

Earliest Priority Filing Date: _____

For Sequence Searches Only Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

Jan Delaval
 Reference Librarian
 Biotechnology & Chemical Library
 CM1 1E07 - 703-308-4498
 jan.delaval@uspto.gov

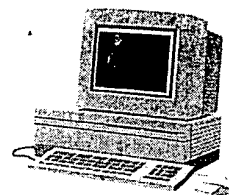
STAFF USE ONLY

Searcher: <u>Jan</u>	Type of Search	Vendors and cost where applicable
Searcher Phone #: <u>4458</u>	NA Sequence (#) _____	STN <input checked="" type="checkbox"/>
Searcher Location: _____	AA Sequence (#) _____	Dialog _____
Date Searcher Picked Up: <u>2/25/03</u>	Structure (#) _____	Questel/Orbit _____
Date Completed: <u>2/25/03</u>	Bibliographic <input checked="" type="checkbox"/>	Dr. Link _____
Searcher Prep & Review Time: _____	Litigation _____	Lexis/Nexis _____
Clerical Prep Time: <u>10 + 20</u>	Fulltext _____	Sequence Systems _____
Online Time: <u>+ 75 + 90</u>	Patent Family _____	WWW/Internet _____
	Other _____	Other (specify) _____

BioTech-Chem Library

Search Results

Feedback Form (Optional)



Scientific & Technical Information Center

The search results generated for your recent request are attached. If you have any questions or comments (compliments or complaints) about the scope or the results of the search, please contact *the BioTech-Chem searcher* who conducted the search *or contact*:

Mary Hale, Supervisor, 308-4258
CM-1 Room 1E01

Voluntary Results Feedback Form

➤ *I am an examiner in Workgroup:* (Example: 1610)

➤ *Relevant prior art found, search results used as follows:*

- ☐ 102 rejection
- ☐ 103 rejection
- ☐ Cited as being of interest.
- ☐ Helped examiner better understand the invention.
- ☐ Helped examiner better understand the state of the art in their technology.

Types of relevant prior art found:

- ☐ Foreign Patent(s)
- ☐ Non-Patent Literature
(journal articles, conference proceedings, new product announcements etc.)

➤ *Relevant prior art not found:*

- ☐ Results verified the lack of relevant prior art (helped determine patentability).
- ☐ Search results were not useful in determining patentability or understanding the invention.

Other Comments:

Drop off completed forms at the **Circulation Desk CM-1**, or send to Mary Hale, CM1-1E01 or e-mail mary.hale@uspto.gov.

2/20/2003

Please search:

A method of determining the efficiency of an enzyme to clean cloth by staining a cloth with a stain

FIXING the stain, (preferably with glutaraldehyde but not required)

washing the stained cloth with different detergent/enzyme combinations to determine which enzyme works best at cleaning fixed stains.

I have readily found every part except fixing the stain with glutaraldehyde prior to washing the stained cloth. Some of the references teach drying the cloth with heat prior to washing is the best I've got.

Thanks,

RG

Priority date is 12/24/97.

=> fil reg

FILE 'REGISTRY' ENTERED AT 19:12:35 ON 25 FEB 2003

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PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

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Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 24 FEB 2003 HIGHEST RN 494745-03-8

DICTIONARY FILE UPDATES: 24 FEB 2003 HIGHEST RN 494745-03-8

TSCA INFORMATION NOW CURRENT THROUGH MAY 20, 2002

Please note that search-term pricing does apply when conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. See HELP PROPERTIES for more information. See STNote 27, Searching Properties in the CAS Registry File, for complete details:
<http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf>

=> d ide can l1

L1 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2003 ACS

RN 111-30-8 REGISTRY

CN Pentanedial (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN **Glutaraldehyde** (6CI, 8CI)

OTHER NAMES:

CN 1,5-Pentanedial

CN 1,5-Pentanedione

CN Aldesan

CN Bactron K 31

CN Banicide

CN Biomate 743

CN Cidex

CN Cidex 7

CN Cidex-Dialyzer

CN Cidexplus

CN Cleancide 275

CN Diglutamic aldehyde

CN Floperm 665X1

CN Glu-Cid

CN Glutaclean

CN Glutaral

CN Glutardialdehyde

CN Glutarex 28

CN Glutaric acid dialdehyde

CN Glutaric dialdehyde

CN Glutohyde

CN Hospex

CN Panavirocide

CN Piror 850

CN Relugan GT

CN Relugan GT 50

CN Relugan GTW

CN Sellatan CF-N

CN Sonacide

CN Sporidicin

Jan Delaval
Reference Librarian
Biotechnology & Chemical Library
CM1 1E07 - 703-308-4498
jan.delaval@uspto.gov

CN Sterihyde
CN Sterihyde L
CN Surcide G 50
CN Tret-O-Lite XC 102
CN Ucarcide 250
CN Wavicide 01
FS 3D CONCORD
DR 37245-61-7, 79215-57-9, 107950-89-0
MF C5 H8 O2
CI COM
LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, AQUIRE, BEILSTEIN*, BIOBUSINESS,
BIOSIS, BIOTECHNO, CA, CABA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB,
CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CHEMSAFE, CIN, CSCHEM, CSNB,
DDFU, DETHERM*, DIOGENES, DIPPR*, DRUGU, EMBASE, ENCOMPLIT, ENCOMPLIT2,
ENCOMPPAT, ENCOMPPAT2, HODOC*, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA,
MEDLINE, MRCK*, MSDS-OHS, NAPRALERT, NIOSHTIC, PDLCOM*, PHARMASEARCH,
PIRA, PROMT, RTECS*, SPECINFO, TOXCENTER, TULSA, ULIDAT, USAN, USPAT2,
USPATFULL, VETU, VTB
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**, WHO
(**Enter CHEMLIST File for up-to-date regulatory information)

OHC- (CH₂)₃-CHO

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

7940 REFERENCES IN FILE CA (1962 TO DATE)
647 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
7955 REFERENCES IN FILE CAPLUS (1962 TO DATE)
86 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 138:127016
REFERENCE 2: 138:127012
REFERENCE 3: 138:126994
REFERENCE 4: 138:126689
REFERENCE 5: 138:126296
REFERENCE 6: 138:123037
REFERENCE 7: 138:121753
REFERENCE 8: 138:121650
REFERENCE 9: 138:119427
REFERENCE 10: 138:117673

=> d his

(FILE 'HOME' ENTERED AT 18:20:27 ON 25 FEB 2003)
SET COST OFF

FILE 'REGISTRY' ENTERED AT 18:20:34 ON 25 FEB 2003
E GLUTARALDEHYDE/CN

L1 1 S E3

SEL CHEM

FILE 'HCAPLUS' ENTERED AT 18:21:05 ON 25 FEB 2003

L2 18241 S E1-E42
L3 7978 S L1
L4 644 S PENTANEDIAL
L5 18241 S L2,L3,L4
L6 345 S L5 AND (TEXTIL? OR CLOTH?)/SC,SX,CW,BI
L7 154 S L5 AND FABRIC/SC,SX,CW,BI
L8 977 S L5 AND (FIBRE OR FIBER)/SC,SX,CW,BI
L9 1168 S L6-L8
L10 124 S L9 AND (STAIN? OR DESTAIN?)
L11 13 S L10 AND (TANNING OR TANNED OR LEATHER OR COTTON OR CARPET OR
SEL DN AN 2 3 5 7 8 11 12
L12 7 S L11 AND E43-E63
L13 2 S L9 AND (ANTISTAIN? OR ANTI STAIN?)
L14 1 S L13 AND CARPET
L15 7 S L12,L14
L16 43 S L6 AND ENZYM?/SC,SX,CW,BI
L17 41 S L16 NOT L10-L15
SEL DN AN 23 25 28
L18 3 S E64-E72
L19 10 S L15,L18
L20 10 S L19 AND (FIX? OR IMMOBIL? OR ?STAIN?)
L21 5320 S L5 AND ENZYM?/SC,SX,CW,BI
L22 563 S L21 AND (WASH? OR CLEAN? OR DETERGENT? OR SURFACE ACTIVE OR S
L23 39 S L22 AND ?STAIN?
SEL DN AN 10
L24 1 S E73-E75
L25 11 S L20,L24
E GENENCOR/PA,CS
L26 515 S E3-E78
E SCHELLENBERGER V/AU
L27 72 S E3,E4
E NAKI D/AU
L28 11 S E3-E5
E COLLIER K/AU
L29 39 S E3-E7
E KELLIS J/AU
L30 43 S E4-E8
E NADHERNY J/AU
L31 8 S E4
L32 0 S L5 AND L27-L31
L33 0 S L5 AND L26
L34 40 S L26 AND L27-L31
L35 10 S L27 AND L28-L31
L36 9 S L29 AND L30,L31
L37 8 S L30 AND L31
L38 11 S L35-L37
E TEXTILES/CT
E E3+ALL
L39 60612 S E2,E1+NT
L40 275692 S TEXTIL?/SC,SX
L41 2800 S L39,L40 AND ENZYM?/SC,SX,CW,BI
L42 953 S L41 AND (DETERGENT? OR SURFACE ACTIVE OR SOAP? OR LAUNDER? OR
L43 61 S L26-L38 AND L42
L44 30 S L43 NOT 3/SC,SX
SEL DN AN 8 14
L45 2 S L44 AND E1-E6
L46 96 S L42 AND (STAIN? OR DESTAIN? OR ANTISTAIN?)
L47 91 S L46 NOT L10-L20,L23-L25,L44
SEL DN AN 27 29
L48 2 S E7-E12

L49 15 S L45,L48,L25
L50 20 S ?ASSAY? AND L42
L51 80 S L41 AND ?ASSAY?
L52 10 S L51 AND ?STAIN?
L53 40690 S (FABRIC OR MATERIAL OR PLASTIC OR GLASS OR CERAMIC OR CLOTH O
L54 1622 S L53 AND STAIN?
L55 190 S L54 AND FIX?
L56 26 S L55 AND ?ASSAY?
L57 918 S L53 AND L5
L58 52 S L57 AND L54
L59 57 S L57 AND ?STAIN?
L60 5 S L58,L59 AND ?ASSAY?
L61 15 S L49 AND L2-L60
L62 15 S L61 AND (?STAIN? OR SPOT? OR FIX? OR ?ASSAY? OR ENZYM? OR CLE
L63 9 S L61 AND (ENZYM? OR DETERGENT? OR SURFACE ACTIVE?)/SC,SX
L64 15 S L62,L63
L65 9 S L64 AND (PY<=1997 OR PRY<=1997 OR AY<=1997)
L66 6 S L64 NOT L65

FILE 'REGISTRY' ENTERED AT 19:12:35 ON 25 FEB 2003

=> fil hcaplus

FILE 'HCAPLUS' ENTERED AT 19:12:51 ON 25 FEB 2003

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FILE COVERS 1907 - 25 Feb 2003 VOL 138 ISS 9
FILE LAST UPDATED: 24 Feb 2003 (20030224/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d l65 all hitstr tot

L65 ANSWER 1 OF 9 HCAPLUS COPYRIGHT 2003 ACS
AN 1999:468476 HCAPLUS
DN 131:89406
TI Method of assaying for a preferred enzyme and/or preferred detergent composition
IN Schellenberger, Volker; Naki, Donald P.; Collier, Katherine D.; Kellis, James T., Jr.; Nadherny, Joanne
PA Genencor International, Inc., USA
SO PCT Int. Appl., 13 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM C12Q001-00
CC 46-6 (Surface Active Agents and Detergents)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9934011	A2	19990708	WO 1998-US27629	19981223 <--
	WO 9934011	A3	20000210		
	W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, CZ, DE, DE, DK, EE, EE, ES, FI, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	CA 2313950	AA	19990708	CA 1998-2313950	19981223 <--
	AU 9922070	A1	19990719	AU 1999-22070	19981223 <--
	EP 1042501	A2	20001011	EP 1998-966092	19981223 <--
	R: BE, DE, DK, ES, FR, GB, IT, NL, FI				
	JP 2002500019	T2	20020108	JP 2000-526665	19981223 <--
PRAI	US 1997-68796P	P	19971224 <--		
	WO 1998-US27629	W	19981223		
AB	A method of assaying for a preferred enzyme comprises: (a) providing a swatch of material comprising a piece of material and a stain , (b) fixing the stain to the material (c) applying an enzyme to the swatch, and incubating the swatch and enzyme . The material is selected from fabric , plastic , glass or ceramic .				
ST	enzyme detergent assay stain				
	removal				
IT	Sauces (condiments)				
	(gravy; method of assaying for a preferred enzyme and/or preferred detergent compn.)				
IT	Blood				
	Ceramics				
	Cheese				
	Chocolate				
	Detergents				
	Egg, poultry				
	Grass (Poaceae)				
	Inks				
	Milk				
	Pigments, nonbiological				
	Spinach (Spinacia oleracea)				
	Textiles				
	(method of assaying for a preferred enzyme and/or preferred detergent compn.)				
IT	Enzymes , uses				
	RL: ANT (Analyte); TEM (Technical or engineered material use); ANST (Analytical study); USES (Uses)				
	(method of assaying for a preferred enzyme and/or preferred detergent compn.)				
IT	Glass , miscellaneous				
	Plastics , miscellaneous				
	RL: MSC (Miscellaneous)				
	(method of assaying for a preferred enzyme and/or preferred detergent compn.)				
IT	Clays, processes				
	RL: REM (Removal or disposal); PROC (Process)				
	(method of assaying for a preferred enzyme and/or preferred detergent compn.)				
IT	9000-92-4, Amylase 9001-62-1, Lipase 9001-92-7, Protease 9012-54-8, Cellulase 80498-15-3, Laccase				
	RL: ANT (Analyte); TEM (Technical or engineered material use); ANST				

(Analytical study); USES (Uses)
(method of **assaying** for a preferred **enzyme** and/or
preferred **detergent** compn.)

- L65 ANSWER 2 OF 9 HCAPLUS COPYRIGHT 2003 ACS
AN 1997:102915 HCAPLUS
DN 126:208801
TI Alkaline-pH-acting digestive **enzymes** of the polyphagous insect
pest *Spilosoma obliqua*: stability and potential as **detergent**
additives
AU Anwar, Adil; Saleemuddin, Mohammed
CS Dep. Biochemistry, Aligarh Muslim Univ., Aligarh, 202002, India
SO Biotechnology and Applied Biochemistry (1997), 25(1), 43-46
CODEN: BABIEC; ISSN: 0885-4513
PB Portland Press
DT Journal
LA English
CC 7-2 (**Enzymes**)
Section cross-reference(s): 16
AB The gut contents of the fifth-instar larvae of the polyphagous insect pest
Spilosoma obliqua reared on castor-bean leaves exhibit high proteolytic,
amylolytic, and lipolytic activities. While the pH optimum of proteolytic
activity was 11.0, those of amylase and lipase were 9.0 and 8.0, resp.
Among these, the lipase had a temp. optimum of 40.degree.C; the amylolytic
and proteolytic activities peaked at 50.degree.C. All three
enzyme activities could be nearly quant. pptd. from the gut
contents at 60% (NH₄)₂SO₄ satn. The protease, amylase, and lipase in the
fraction obtained were reasonably stable at 40.degree.C and retained over
20, 41, and 50% activities resp. after 24 h at pH 9.0.
Glutaraldehyde treatment of the dialyzed ammonium sulfate fraction
resulted in a marked improvement in the retention of **enzyme**
activities at 40.degree.C. The ammonium sulfate fraction was also highly
effective in facilitating the removal of old **bloodstains** from
cotton cloth in both the presence and absence of
detergents.
ST *Spilosoma* digestive **enzyme** thermal stability characterization;
polyphagous insect gut proteinase amylase lipase; **detergent**
additive **stain** remover digestive **enzyme**
IT **Detergents**
Spilosoma obliqua
(characterization, stability, and potential as **detergent**
additives of alk.-pH-acting digestive **enzymes** of polyphagous
insect pest *Spilosoma obliqua*)
IT **Enzymes**, biological studies
RL: BAC (Biological activity or effector, except adverse); BPR (Biological
process); BSU (Biological study, unclassified); NUU (Other use,
unclassified); BIOL (Biological study); PROC (Process); USES (Uses)
(digestive; characterization, stability, and potential as
detergent additives of alk.-pH-acting digestive **enzymes**
of polyphagous insect pest *Spilosoma obliqua*)
IT Digestive tract
(**enzymes** from; characterization, stability, and potential as
detergent additives of alk.-pH-acting digestive **enzymes**
of polyphagous insect pest *Spilosoma obliqua*)
IT **Detergents**
(laundry, **enzyme**-contg.; characterization,
stability, and potential as **detergent** additives of
alk.-pH-acting digestive **enzymes** of polyphagous insect pest
Spilosoma obliqua)
IT **Detergents**
(**stain** removers; characterization, stability, and potential
as **detergent** additives of alk.-pH-acting digestive
enzymes of polyphagous insect pest *Spilosoma obliqua*)

IT 9000-92-4, Amylase 9001-62-1, Lipase 9001-92-7, Protease
 RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); BSU (Biological study, unclassified); NUU (Other use, unclassified); BIOL (Biological study); PROC (Process); USES (Uses) (characterization, stability, and potential as **detergent** additives of alk.-pH-acting digestive **enzymes** of polyphagous insect pest *Spilosoma obliqua*)

IT 111-30-8, **Glutaraldehyde**
 RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study) (thermal stabilization of **enzymes** by; characterization, stability, and potential as **detergent** additives of alk.-pH-acting digestive **enzymes** of polyphagous insect pest *Spilosoma obliqua*)

IT 111-30-8, **Glutaraldehyde**
 RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study) (thermal stabilization of **enzymes** by; characterization, stability, and potential as **detergent** additives of alk.-pH-acting digestive **enzymes** of polyphagous insect pest *Spilosoma obliqua*)

RN 111-30-8 HCAPLUS
 CN Pentanedial (9CI) (CA INDEX NAME)

OHC-(CH₂)₃-CHO

L65 ANSWER 3 OF 9 HCAPLUS COPYRIGHT 2003 ACS
 AN 1992:85762 HCAPLUS
 DN 116:85762
 TI Antimicrobial **stain-resist carpet** finish
 IN Scholla, Michael H.; Vinod, Yashavant V.
 PA du Pont de Nemours, E. I., and Co., USA
 SO U.S., 13 pp. Cont.-in-part of U.S. Ser. No. 269,265, abandoned.
 CODEN: USXXAM
 DT Patent
 LA English
 IC ICM A61K007-16
 NCL 424405000
 CC 40-9 (**Textiles** and Fibers)
 FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5059420	A	19911022	US 1990-509986	19900418 <--
	US 4925707	A	19900515	US 1987-136035	19871221 <--
	AU 8827090	A1	19890622	AU 1988-27090	19881220 <--
	AU 619784	B2	19920206		
	GB 2211865	A1	19890712	GB 1988-29618	19881220 <--
	GB 2211865	B2	19911030		
	FR 2624895	A1	19890623	FR 1988-16903	19881221 <--
	FR 2624895	B1	19931217		
	JP 02004305	A2	19900109	JP 1988-323215	19881221 <--
	BE 1004111	A3	19920929	BE 1988-1422	19881221 <--
	US 5137759	A	19920811	US 1990-522481	19900511 <--
	US 5096747	A	19920317	US 1991-692161	19910426 <--
PRAI	US 1987-136035		19871221 <--		
	US 1988-269265		19881109 <--		
	US 1990-509986		19900418 <--		
AB	The title finishes, useful on installed nylon carpets , contain antistain agents (sulfophenol-HCHO condensates and/or hydrolyzed vinyl arom. compd.-maleic anhydride polymers) and glutaraldehyde				

as the antimicrobicide.

ST **stainproofing** microbicide finish carpet;
glutaraldehyde microbicide finish carpet; sulfophenol
condensate **stainproofing** carpet; formaldehyde
condensate **stainproofing** carpet; maleic anhydride
copolymer **stainproofing**; nylon carpet
stainproofing microbicide

IT Polyamide fibers, miscellaneous
RL: MSC (Miscellaneous)
(carpets, microbicide and **stainproofing** finishes
for)

IT **Carpets**
(nylon, microbicide and **stainproofing** finishes for)

IT Soilproofing
(agents, sulfonated phenolic resins and hydrolyzed maleic
anhydride-styrene polymers as)

IT Phenolic resins, uses
RL: USES (Uses)
(sulfo-contg., **stainproofing** agent, in finishes for
carpets)

IT 111-30-8, Glutaraldehyde
RL: USES (Uses)
(microbicides, in finishes for carpets)

IT 50-00-0D, Formaldehyde, polymers with sulfonaphthol 1321-67-1D,
Naphthalenol, sulfonated, polymers with formaldehyde 9011-13-6D, Maleic
anhydride-styrene copolymer, hydrolyzed 31455-16-0, Mesitol NBS
RL: USES (Uses)
(**stainproofing** agent, in finishes for carpets)

IT 111-30-8, Glutaraldehyde
RL: USES (Uses)
(microbicides, in finishes for carpets)

RN 111-30-8 HCAPLUS

CN Pentanedial (9CI) (CA INDEX NAME)

OHC-(CH₂)₃-CHO

L65 ANSWER 4 OF 9 HCAPLUS COPYRIGHT 2003 ACS

AN 1991:639836 HCAPLUS

DN 115:239836

TI **Immobilization of medical enzymes on textiles**

IN Ryl'tsev, V. V.; Filatov, V. N.; Vlasov, L. G.; Samoilova, T. I.; Virnik,
R. B.; Berdnikova, L. P.; Kovarskii, A. V.; Pronin, V. I.; Velsher, L. Z.;
et al.

PA All-Union Scientific-Research Institute of the Textile-Haberdashery
Industry, USSR; Moscow Medical Stomatological Institute

SO Ger. (East), 12 pp.
CODEN: GEXXA8

DT Patent

LA German

IC ICM A61K037-48
ICS A61K047-30; A61K009-70; A61L002-08; A61L015-14; A61F013-00

CC 63-8 (Pharmaceuticals)
Section cross-reference(s): 7, 40

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DD 291477	A5	19910704	DD 1990-337016	19900109 <--
PRAI DD 1990-337016		19900109 <--		

AB Proteolytic, collagenolytic or bacteriolytic **enzymes** are
immobilized on textiles, such as cellulosic

fibers and fabrics, activated by treatment with alkali metal periodates. The products are used in surgery, stomatol., etc. A cotton gauze was treated with a NaIO₄ soln. (prepd. in situ) at pH 5, followed by treatment with a hydrolytin soln. in a phosphate buffer (pH 7.5) to give a product usable in the treatment of abscesses, phlegmons and postoperative infections.

- ST medical **enzyme immobilization textile**
- IT Inflammation inhibitors
 - (**enzymes immobilized on textiles as**)
- IT **Textiles**
 - (**enzymes immobilized on, for medicine**)
- IT Surgery
 - (infection in, treatment of, by **enzymes immobilized on textiles**)
- IT **Enzymes**
 - RL: BIOL (Biological study)
 - (medical, **immobilization of, on textiles**)
- IT Periodates
 - RL: BIOL (Biological study)
 - (**textiles activation by, for medical enzyme immobilization**)
- IT Medical goods
 - (bandages, **immobilized enzymes-contg.**)
- IT Periodontium
 - (disease, periodontitis, treatment of, by **enzymes immobilized on textiles**)
- IT 9001-12-1, Collagenase 9001-63-2, Lysozyme 9002-07-7, Trypsin
37338-91-3, Terrilytin 97397-14-3, Protosubtilin
RL: PROC (Process)
 - (**immobilization of, on textiles, for medical products**)
- IT 77-78-1, Dimethylsulfate 111-30-8, Glutaraldehyde
7790-28-5, Sodium periodate
RL: BIOL (Biological study)
 - (**textiles activation by, for medical enzyme immobilization**)
- IT 111-30-8, Glutaraldehyde
RL: BIOL (Biological study)
 - (**textiles activation by, for medical enzyme immobilization**)
- RN 111-30-8 HCAPLUS
- CN Pentanedial (9CI) (CA INDEX NAME)

OHC-(CH₂)₃-CHO

- L65 ANSWER 5 OF 9 HCAPLUS COPYRIGHT 2003 ACS
- AN 1991:627112 HCAPLUS
- DN 115:227112
- TI Microporous polyalkyleneterephthalate **fiber** and its preparation
and use for immobilization of **sustained-release enzymes**
- IN Emi, Shingo
- PA Teijin Ltd., Japan
- SO Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
- DT Patent
- LA Japanese
- IC ICM C12N011-08
- CC 7-7 (**Enzymes**)
- Section cross-reference(s): 34
- FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 03175986				
PRAI	JP 1989-314179	A2	19910731	JP 1989-314179	19891205 <--
AB			19891205 <--		

AB Microporous polyalkyleneterephthalate **fibers** are prepd. for immobilization of **enzymes**. The **enzymes** entrapped on the micropores are also crosslinked. The **enzyme** activity remains active for a longer period of time. Dimethylterephthalate, ethyleneglycol, and 3-carbomethoxy-5-carboxybenzenesulfonic acid 1/2 Mg salt were polymd. via esterification. The **fibers** were washed with 1% NaOH soln. until the alkali residues reduced 20% and the microporosity formed. Papain immobilized on the **fibers** was further crosslinked with **glutaraldehyde**. The **enzyme** activity remained 94% after shaking for 48 h. Without **glutaraldehyde** treatment the activity was undetectable after 6 h.

ST polyalkyleneterephthalate hollow **fiber** crosslinking **enzyme** immobilization; dimethylterephthalate ethyleneglycol copolymer **enzyme** immobilization; sustain release

IT Enzymes

RL: BIOL (Biological study)
(immobilization of, on microporous polyalkyleneterephthalate **fibers**, effect of inter-**enzyme** crosslinking on **enzyme** stability in)

IT Immobilization, biochemical
(of **enzyme**, on microporous polyalkyleneterephthalate **fibers**, effect of inter-**enzyme** crosslinking on **enzyme** stability in)

IT 25038-59-9P, Dimethylterephthalate-ethyleneglycol copolymer, biological studies

RL: PREP (Preparation)
(hollow **fiber**, prepn. of, for **enzyme** immobilization, effect of inter-**enzyme** crosslinking on **enzyme** stability in relation to)

IT 9001-00-7, Bromelain 9001-73-4, Papain
RL: BIOL (Biological study)
(immobilization of, on microporous polyalkyleneterephthalate **fibers**, effect of inter-**enzyme** crosslinking on **enzyme** stability in)

IT 107633-78-3
RL: BIOL (Biological study)
(in polyalkyleneterephthalate **fiber** manuf., microporosity formation in relation to)

IT 1310-73-2, Sodium hydroxide, biological studies
RL: BIOL (Biological study)
(in polyalkyleneterephthalate **fiber** manuf., microporosity formation by washing with)

L65 ANSWER 6 OF 9 HCAPLUS COPYRIGHT 2003 ACS

AN 1991:499407 HCAPLUS

DN 115:99407

TI **Enzyme immobilization on textile for**
bandages

IN Ryl'tsev, V. V.; Filatov, V. N.; Vlasov, L. G.; Samoilova, T. I.; Virnik, R. B.; Berdnikova, L. P.; Kovarskii, A. V.; Pronin, V. I.; Vel'sher, L. Z.; et al.

PA All-Union Scientific-Research Institute of the Textile-Haberdashery Industry, USSR; Moscow Medical Stomatological Institute

SO Ger. Offen., 14 pp.

CODEN: GWXXBX

DT Patent

LA German

IC ICM C12N011-02

ICS C12N011-08; C12N009-50; A61L002-08; A61F013-00; A61L015-44;
A61L015-46; C08J009-36; C08L001-04; C08B015-02; B01J020-24;
B01J020-26

ICA A61K037-64; C08J009-36

ICI C08L077-02

CC 63-7 (Pharmaceuticals)

Section cross-reference(s): 7

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 4000797	A1	19910718	DE 1990-4000797	19900112 <--
	DE 4000797	C2	19930923		
	FR 2657015	A1	19910719	FR 1990-357	19900112 <--
	IN 174032	A	19940903	IN 1990-DE234	19900312 <--
PRAI	DE 1990-4000797		19900112		<--
AB	A bandage which promotes wound healing comprises a textile on which mecrolytic (proteolytic) and/or bacteriolytic (e.g. lysozyme) enzymes are immobilized . Such bandages are easily prepd. and stored, require only small amts. of enzyme (0.02-0.50 wt.%), are insensitive to pH and temp. changes and to enzyme inhibitors in wound secretions, and are not antigenic or pyrogenic. Thus, muslin was impregnated with NaIO4 soln. to produce aldehyde groups which were coupled to collagenase (0.02 wt.%). The cloth was then shaped, packed in polyethylene bags, and sterilized by .gamma.-irradn.				
ST	enzyme immobilization bandage; wound healing collagen immobilization bandage				
IT	Polyamide fibers , biological studies				
	Rayon, biological studies				
	Synthetic fibers				
	RL: BIOL (Biological study)				
	(enzymes immobilization on, for wound dressings)				
IT	Enzymes				
	RL: PROC (Process)				
	(immobilization of, on wound dressings)				
IT	Immobilization , biochemical				
	(of enzymes , on textiles for wound dressings)				
IT	Enzymes				
	RL: PROC (Process)				
	(bacteriolytic, immobilization of, on wound dressings)				
IT	Medical goods				
	(dressings, enzymes immobilization on)				
IT	Medical goods				
	(textiles, enzymes immobilization on)				
IT	77-78-1, Dimethylsulfate 111-30-8, Pentanediol				
	RL: BIOL (Biological study)				
	(enzymes immobilization on textiles with, for wound dressings)				
IT	9032-52-4, Dialdehyde cellulose				
	RL: BIOL (Biological study)				
	(enzymes immobilization on, for wound dressings)				
IT	25038-54-4, Polycaproamide, biological studies				
	RL: BIOL (Biological study)				
	(fibers, enzymes immobilization on, for wound dressings)				
IT	9001-12-1, Collagenase 9001-63-2, Lysozyme 9001-92-7, Proteinase				
	9002-07-7, Trypsin 37338-91-3, Terrilytin 53988-66-2, Hygrolytin				
	97397-14-3, Protosubtilin				
	RL: PROC (Process)				
	(immobilization of, on wound dressings)				
IT	9004-34-6				
	RL: USES (Uses)				
	(rayon, enzymes immobilization on, for wound dressings)				

IT 111-30-8, **Pentanedial**
 RL: BIOL (Biological study)
 (enzymes immobilization on textiles with,
 for wound dressings)
 RN 111-30-8 HCAPLUS
 CN Pentanedial (9CI) (CA INDEX NAME)

OHC-(CH₂)₃-CHO

L65 ANSWER 7 OF 9 HCAPLUS COPYRIGHT 2003 ACS

AN 1988:169132 HCAPLUS

DN 108:169132

TI Hydrophobic cotton cloth as carrier for immobilization
 of enzymes

IN Yamazaki, Hiroshi

PA Can.

SO Can., 43 pp.

CODEN: CAXXA4

DT Patent

LA English

IC ICM C08B011-20

ICS C12N011-10

CC 40-9 (Textiles and Fibers)

Section cross-reference(s): 7

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	CA 1229808	A1	19871201	CA 1984-462923	19840911 <--
PRAI	CA 1984-462923		19840911	<--	
AB	The title cloth is prepd. by reaction with bifunctional compds. and phenols or alcs. in a single step in aq. basic solns. Enzymes are immobilized in the carriers by adsorption and stabilized by the crosslinking agent. Heating cotton flannel swollen with 4M NaOH contg. small amts. of NaBH ₄ with epichlorohydrin and PhOH gave a hydrophobic cloth which, when soaked with a 20 .mu.g/mL soln. of .beta.-galactosidase (I) in 0.05M phosphate buffer (pH 7.0) retained 96% I.				
ST	immobilization enzyme cotton watertproofing; epichlorohydrin waterproofing agent cotton; phenol waterproofing cotton; galactosidase immobilization cotton waterproofing				
IT	Alcohols, uses and miscellaneous Phenols, uses and miscellaneous RL: USES (Uses) (cotton waterproofing in presence of, for enzyme immobilization)				
IT	Enzymes RL: USES (Uses) (immobilization of, carriers for, cotton cloth waterproofing for)				
IT	Waterproofing (agents, difunctional compds., for cotton cloth for immobilization of enzymes)				
IT	Textiles (cotton, enzymes immobilization on, preparatory modification for)				
IT	108-95-2, Phenol, uses and miscellaneous 111-27-3, Hexanol, uses and miscellaneous 111-87-5, Octanol, uses and miscellaneous 112-30-1, Decanol 112-53-8, Dodecanol 135-19-3, .beta.-Naphthol, uses and miscellaneous 529-86-2, Anthranol RL: USES (Uses)				

(cotton waterproofing in presence of, for enzyme immobilization)

IT 111-30-8, Glutaraldehyde 1954-28-5, Triethylene glycol diglycidyl ether 2224-15-9, Ethylene glycol diglycidyl ether 2238-07-5, Diglycidyl ether 3132-64-7, Epibromohydrin 16096-31-4, 1,6-Hexanediol diglycidyl ether 26545-73-3, Dichlorohydrin 36900-69-3

RL: USES (Uses)
(waterproofing agents, for cotton fabric for enzyme immobilization)

IT 111-30-8, Glutaraldehyde

RL: USES (Uses)
(waterproofing agents, for cotton fabric for enzyme immobilization)

RN 111-30-8 HCAPLUS

CN Pentanedial (9CI) (CA INDEX NAME)

OHC-(CH₂)₃-CHO

L65 ANSWER 8 OF 9 HCAPLUS COPYRIGHT 2003 ACS

AN 1986:70257 HCAPLUS

DN 104:70257

TI Manufacture of **textile printing screens**

IN Mera, Tetsuhiro; Ohashi, Katsuichiro; Senoo, Manabu

PA Hama Chemical K. K., Japan

SO Jpn. Kokai Tokkyo Koho, 2 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM D06P005-00

CC 40-6 (Textiles)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 60215883				
PRAI	JP 1984-68150	A2	19851029	JP 1984-68150	19840405 <--
AB	In coating Tetoron (I) screen with a photosensitive emulsion and exposing the coating to light for image formation, swelling of image layer and staining by dyes are prevented by coating the photog. developed image layer with compns. contg. an aldehyde, an inorg. acid, a glycol, and a defoamer. Thus, an image layer of I screen was coated with a mixt. of glutaraldehyde 100-140, HCl 30-50, propylene glycol 30-50, a defoamer 2-4, and H ₂ O 750-850 parts. The coated screen had good water-resistance properties and good resistance to staining by reactive dyes, whereas staining occurred for the screen coated with a compn. contg. I, H ₂ SO ₄ , and Na ₂ SO ₄ only.				
ST	water resistance polyester printing screen ; staining resistance polyester printing screen ; glutaraldehyde polyester screen coating; propylene glycol polyester screen coating; hydrochloric acid polyester screen coating				
IT	Templates (polyester printing screens coated with glutaraldehyde -hydrochloric acid-propylene glycol mixts. as, resistant to water and staining by reactive dyes)				
IT	Textile printing (polyester printing screens coated with glutaraldehyde -hydrochloric acid-propylene glycol mixts. for, resistant to water and staining by reactive dyes)				
IT	Polyester fibers , uses and miscellaneous				
RL: USES (Uses)	(printing screens from, coated with				

glutaraldehyde-hydrochloric acid-propylene glycol mixts., with improved resistance to water and **staining** by reactive dyes)

IT 57-55-6, uses and miscellaneous
 RL: USES (Uses)
 (coatings contg., on **printing screens**, for improved resistance to **staining** by reactive dyes)

IT 111-30-8
 RL: MOA (Modifier or additive use); USES (Uses)
 (crosslinking agents, coatings contg., on **printing screens**, for water resistance)

IT 7647-01-0, uses and miscellaneous
 RL: CAT (Catalyst use); USES (Uses)
 (crosslinking catalysts, for **glutaraldehyde**, for coating of **printing screens**)

IT 111-30-8
 RL: MOA (Modifier or additive use); USES (Uses)
 (crosslinking agents, coatings contg., on **printing screens**, for water resistance)

RN 111-30-8 HCAPLUS
 CN Pentanedial (9CI) (CA INDEX NAME)

OHC-(CH₂)₃-CHO

L65 ANSWER 9 OF 9 HCAPLUS COPYRIGHT 2003 ACS
 AN 1971:113294 HCAPLUS
 DN 74:113294
 TI Colorfast dyes for **washable** and drycleanable **leather**
 AU Fein, Martin L.; Viola, Samuel J.; Filachione, Edward M.
 CS East. Util. Res. Dev. Dep., Philadelphia, PA, USA
 SO Journal of the American Leather Chemists Association (1970),
 65(12), 584-92
 CODEN: JALCAQ; ISSN: 0002-9726
 DT Journal
 LA English
 CC 41 (Leather and Related Materials)
 AB Chrome-**glutaraldehyde** tanned garment and glove
leathers are quite resistant to **washing**, therefore the dyes and finishes should also be resistant to **cleaning** solns. A no. of dyes suitable for **textiles** have been developed, and of these Procion M, a dichloro-s-triazine-type dye, appeared to be most suitable for **leather**. **Wash** tests and dry **cleaning** tests were made on cabretta and garment suede **leathers** dyed with Procion M. There was little or no fading of color or **staining** of test **cloths** during **washing**. Dry **cleaning** with Stoddard solvent, Valclene (1,1,2-trichloro-1,2,2-trifluoroethane), or perchloroethylene presented no problems and essentially no dye dissolved to discolor the solvent.

ST dyes colorfast **leather**; chrome **glutaraldehyde** tanned **leather** dyes; garment **leather** chrome **glutaraldehyde** tanned; glove **leather** chrome **glutaraldehyde** tanned

IT **Detergents**, uses and miscellaneous
 (dry-cleaning, **leather** dyes fast to)

IT **Leather**
 (dyes for, colorfast dry-cleanable and washable)

IT **Dyes**
 (for **leather**, colorfast dry-cleanable and washable)

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L66 ANSWER 1 OF 6 HCAPLUS COPYRIGHT 2003 ACS
AN 2001:571916 HCAPLUS
DN 135:355167
TI Experimental observation on bacteriostatic/fungistatic efficacy of
glutaraldehyde derivative
AU Wang, Chuanbi; Wang, Xueping; Zhao, Chunlan; Qiao, Mei; Shi, Lei
CS Shanxi Provincial Sanitary and Anti- epidemic Station, Taiyuan, 030012,
Peop. Rep. China
SO Zhongguo Xiaoduxue Zazhi (2001), 18(2), 79-83
CODEN: ZXZAFO; ISSN: 1001-7658
PB Zhongguo Xiaoduxue Zazhi Bianjibu
DT Journal
LA Chinese
CC 10-5 (Microbial, Algal, and Fungal Biochemistry)
Section cross-reference(s): 55, 59
AB The bacteriostatic/fungistatic efficacy of **glutaraldehyde** deriv.
3-hydroxy-2,4-halo-**glutaraldehyde** was studied by suspension
bacteriostatic/fungistatic test. The min. inhibitory concn. for
Escherichia coli was 31.25 mg L-1, and both E.coli and Staphylococcus
aureus were completely killed by 10,000 mg L-1 soln. for 1 min. The
inhibitory rates of E.coli, S.aureus, and Candida albicans in suspension
on **paper** dried after impregnated with its 30,000 mg L-1 soln.
were 75.87, 80.00, and 73.96%, resp. after contact for 20 min. The
inhibitory rate of E.coli in suspension on pure **cotton**
cloth dried after impregnated with 10,000 mg L-1 soln. was 99.99%
after contact for 3 min and 60.80% after **cloth** was
washed 50 times. The oral LD50 of **glutaraldehyde** deriv.
in mice was 16,950 mg kg-1. Its 50,000 mg L-1 soln. was not corrosive to
stainless steel, copper, and aluminum, but slightly corrosive to
carbon steel.
ST **glutaraldehyde** deriv antibacterial effect bacteriostatic
fungistatic steel corrosion toxicity
IT Antibacterial agents
Candida albicans
Corrosion
Escherichia coli
Staphylococcus
Toxicity
(exptl. observation on bacteriostatic/fungistatic efficacy of
glutaraldehyde deriv.)
IT 11121-90-7, Carbon steel, processes
RL: PEP (Physical, engineering or chemical process); REM (Removal or
disposal); PROC (Process)
(corrosion; exptl. observation on bacteriostatic/fungistatic efficacy
of **glutaraldehyde** deriv.)
IT 89364-32-9D, 2,4-halo derivs.
RL: ADV (Adverse effect, including toxicity); BSU (Biological study,
unclassified); BIOL (Biological study)
(exptl. observation on bacteriostatic/fungistatic efficacy of
glutaraldehyde deriv.)

L66 ANSWER 2 OF 6 HCAPLUS COPYRIGHT 2003 ACS
AN 2001:418919 HCAPLUS
DN 136:120232
TI **Enzymic** detergency of cotton **fabrics** stained
with artificial soils
AU Shimomura, Kumiko; Onozawa, Haruko; Komiyama, Jiro
CS Showa Women's University, Tokyo, Japan
SO Sen'i Seihin Shohi Kagaku (2001), 42(3), 180-188
CODEN: SESKB9; ISSN: 0037-2072
PB Nippon Sen'i Seihin Shohi Kagakkai

DT Journal
 LA Japanese
 CC 46-5 (**Surface Active Agents and Detergents**)
 AB In **washing cloths** with com. **detergents**, **enzymes** work inevitably under the influence of the **detergent** components. Our previous reports show that the activity of an alk. protease in the hydrolysis of dissolved protein, gelatin, is enhanced or suppressed under the presence of certain components of the **detergents**. Our last report also shows that this is true in the hydrolysis of solid protein and the following dissoln. Based on these studies, the present study was performed to reveal the synergistic effects of the protease and some of the **detergent** components, namely surfactants and oxidizing agents, on the detergency of artificially **stained cloths**. Two kinds of **stained** cotton **cloths** were used: one was supplied by Sentaku Kagaku Kyoukai (Institute of **Washing Science**, Japan) and another one was **stained** with coffee + milk. After **washing** the **cloths**, in a Terg-O-tometer and in a shaken Erlenmeyer flask, the variation of the reflectance and the degree of the removal of milk protein attached, were measured. It was found that the correlation between the detergency estd. from a reflectance and the protein removal for the **cloth** soiled with coffee + milk, was very high as expected. Further, the detergencies of the two kinds of **stained cloths** were estd. for the **washing** soln. base (B) contg. sodium carbonate, sodium sulfate and carboxy Me cellulose; B + surfactants (S); B + S + an alkali protease (E); B + S + E + oxidizing agent (O); and B + S + E + O + activator (A) under two different (conditions for) **washing** time and temp. It was found that in such model **washing** systems, the detergency from the protease is also enhanced or assisted by the presence of some nonionic surfactants and oxidizing agents.

ST **enzymic** detergency cotton **fabric** artificial soil
stained; protease anionic nonionic surfactant synergistic effect

IT Polyoxyalkylenes, uses
 RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (alkyl derivs.; synergistic effects of protease and some of **detergent** components on detergency of artificially **stained cloth**)

IT Surfactants
 (anionic; synergistic effects of protease and some of **detergent** components on detergency of artificially **stained cloth**)

IT Coffee products
 (beverages; **enzymic** detergency of cotton **fabrics** **stained** with coffee + milk)

IT **Textiles**
 (cotton; **enzymic** detergency of cotton **fabrics** **stained** with artificial soils)

IT Detergency
 (**enzymic** detergency of cotton **fabrics** **stained** with artificial soils)

IT Milk
 (**enzymic** detergency of cotton **fabrics** **stained** with coffee + milk)

IT Surfactants
 (nonionic; synergistic effects of protease and some of **detergent** components on detergency of artificially **stained cloth**)

IT 9001-92-7, Protease
 RL: TEM (Technical or engineered material use); USES (Uses)
 (**enzymic** detergency of cotton **fabrics** **stained** with artificial soils)

- IT 2386-53-0, Sodium dodecylsulfonate 25155-30-0, Sodium dodecylbenzenesulfonate 25322-68-3D, alkyl derivs.
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(synergistic effects of protease and some of **detergent** components on detergency of artificially **stained cloth**)
- L66 ANSWER 3 OF 6 HCAPLUS COPYRIGHT 2003 ACS
AN 2001:348631 HCAPLUS
DN 136:136646
TI Study of detergency ability of recombination **enzyme**
AU Xia, Liangshu; Nie, Changming
CS Department of Chemical Engineering, Central South Institute of Technology, Hengyang, 421002, Peop. Rep. China
SO Riyong Huaxue Gongye (2001), 31(2), 59-61
CODEN: RHGOE8; ISSN: 1001-1803
PB Qinggongyebu Kexue Jishu Qingbao Yanjiuso
DT Journal
LA Chinese
CC 46-6 (**Surface Active Agents and Detergents**)
AB The detergency ability of recombination **enzyme** made from alcalase, amylase and alk. cellulase to the blood-, milk- and carbon ink-**stained cotton cloth** was studied under different **washing** conditions. The optimum detergency conditions were as follows: dosage of the recombination **enzyme** 20 g/L (**washing** soln.), pH of **washing** soln. 9-10, hardness of **washing** soln. 0-1 x 10⁻³, **washing** temp. 20-60.degree. and **washing** time 20-30 min.
- ST **detergent** recombination **enzyme** detergency; blood **stained cotton cloth washing detergent** alcalase amylase cellulase; milk **stained cotton cloth washing detergent** alcalase amylase cellulase; carbon ink **stained cotton cloth washing detergent**
- IT **Textiles**
(cotton; study of detergency ability of recombination **enzyme** in **washing** blood-, milk- and carbon ink-**stained**)
- IT **Detergents**
(laundry; study of detergency ability of recombination **enzyme** in **washing** blood-, milk- and carbon ink-**stained cotton cloth**)
- IT 9012-54-8, Cellulase
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(alk.; study of detergency ability of recombination **enzyme** in **washing** blood-, milk- and carbon ink-**stained cotton cloth**)
- IT 9000-92-4, Amylase 9014-01-1, Alcalase
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(study of detergency ability of recombination **enzyme** in **washing** blood-, milk- and carbon ink-**stained cotton cloth**)
- L66 ANSWER 4 OF 6 HCAPLUS COPYRIGHT 2003 ACS
AN 2000:403351 HCAPLUS
DN 133:165113
TI Protease, a new tool for denim **washing**
AU Yoon, Mee-Young; McDonald, Hugh; Chu, Karen; Garratt, Clare
CS Genencor International Inc., Palo Alto, CA, USA
SO Textile Chemist and Colorist & American Dyestuff Reporter (2000), 32(5), 25-29
CODEN: TCCRFJ; ISSN: 1526-2847

PB American Association of Textile Chemists and Colorists
DT Journal
LA English
CC 40-8 (**Textiles** and Fibers)
AB Cellulase **enzymes** have been widely used in denim processing to produce fashionably aged looks. Conventional whole acid stable cellulases are being used successfully to achieve a worn look with short process times. The final look achieved by these types of **enzymes** is usually characterized as flat and low contrast, due to a high level of **back-staining**. Literature reports suggest that **back-staining** is caused by many of the proteins present in the conventional whole acid stable cellulases. Lab. scale **wash** performance tests were conducted using a unique protease under different processing conditions. The protease added during rinsing or at the end of the cellulase **washing** step resulted in significant redn. of **back-staining** and improved contrast. The protease treatment at low temps. also removed all but trace amts. of residual cellulase bound to the denim.

ST cotton denim **washing** protease
IT **Washing**
(addn. of protease during rinsing or at end of cellulase **washing** reduces **back-staining** and residual cellulase in indigo-dyed cotton denim)

IT **Textiles**
(cotton, denim; addn. of protease during rinsing or at end of cellulase **washing** reduces **back-staining** and residual cellulase in indigo-dyed cotton denim)

IT 9001-92-7, Protease 9012-54-8, Cellulase
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(addn. of protease during rinsing or at end of cellulase **washing** reduces **back-staining** and residual cellulase in indigo-dyed cotton denim)

RE.CNT 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD
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- (1) Clarkson, K; WO 9429426 HCAPLUS
- (2) Klahorst, S; Book of Papers 1992, P243 HCAPLUS
- (3) Otter, D; Biotechnology and Bioengineering 1989, V34(3), P291 HCAPLUS
- (4) Paulo, A; Textile Research Journal 1998, V68(6), P398
- (5) Purtell, C; Textile Technology International 1998, P73
- (6) Shook, D; Book of Papers, Charlotte 1994, P34 HCAPLUS
- (7) Swicegood, J; Section I in AATCC Garment Wet Processing Technical Manual 1994, P7
- (8) Videbaek, T; ITB Dyeing/Printing/Finishing 1994, V40, P25
- (9) Zimmerman, K; Bobbin 1993, P62

L66 ANSWER 5 OF 6 HCAPLUS COPYRIGHT 2003 ACS
AN 2000:318976 HCAPLUS
DN 133:57665
TI **Immobilization** of porcine pancreas lipase on zirconia coated alkylamine **glass** using **glutaraldehyde**
AU Malik, Sarita V.; Kalia, V.; Pundir, C. S.
CS Biochemistry Research Laboratory, Department of Bio-Sciences, Maharshi Dayanand University, Rohtak, 124001, India
SO Indian Journal of Chemical Technology (2000), 7(2), 64-67
CODEN: ICHTEU; ISSN: 0971-457X
PB National Institute of Science Communication, CSIR
DT Journal
LA English
CC 16-9 (Fermentation and Bioindustrial Chemistry)
Section cross-reference(s): 7
AB Com. available lipase from porcine-pancreas has been **immobilized** onto zirconia coated alkylamine **glass**-beads, through the process

of **glutaraldehyde** coupling with 100% retention of its initial activity. The **enzyme** showed changes in its phys. properties after **immobilization**. The utility of **immobilized enzyme** in removal of oil **stain** from **cotton cloth** is demonstrated.

ST lipase **immobilized zirconia coated alkylamine glass bead**

IT **Textiles**

(cotton; **immobilization** of porcine pancreas lipase on zirconia coated alkylamine **glass** using **glutaraldehyde**)

IT **Detergents**

(enzyme-contg.; **immobilization** of porcine pancreas lipase on zirconia coated alkylamine **glass** using **glutaraldehyde**)

IT **Immobilization, biochemical**

(enzyme; **immobilization** of porcine pancreas lipase on zirconia coated alkylamine **glass** using **glutaraldehyde**)

IT **Detergents**

(laundry; **immobilization** of porcine pancreas lipase on zirconia coated alkylamine **glass** using **glutaraldehyde**)

IT Fats and Glyceridic oils, biological studies

RL: BSU (Biological study, unclassified); BIOL (Biological study) (mustard; **immobilization** of porcine pancreas lipase on zirconia coated alkylamine **glass** using **glutaraldehyde**)

IT **Glass beads**

RL: NUU (Other use, unclassified); USES (Uses) (porous; **immobilization** of porcine pancreas lipase on zirconia coated alkylamine **glass** using **glutaraldehyde**)

IT 9001-62-1P

RL: BPN (Biosynthetic preparation); CAT (Catalyst use); BIOL (Biological study); PREP (Preparation); USES (Uses) (**immobilization** of porcine pancreas lipase on zirconia coated alkylamine **glass** using **glutaraldehyde**)

IT 111-30-8, **Glutaraldehyde**

RL: NUU (Other use, unclassified); USES (Uses) (**immobilization** of porcine pancreas lipase on zirconia coated alkylamine **glass** using **glutaraldehyde**)

RE.CNT 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD

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- IT 111-30-8, **Glutaraldehyde**

RL: NUU (Other use, unclassified); USES (Uses)
 (immobilization of porcine pancreas lipase on zirconia coated
 alkylamine glass using glutaraldehyde)
 RN 111-30-8 HCAPLUS
 CN Pentanedial (9CI) (CA INDEX NAME)

OHC-(CH₂)₃-CHO

L66 ANSWER 6 OF 6 HCAPLUS COPYRIGHT 2003 ACS
 AN 1999:478003 HCAPLUS
 DN 131:244542
 TI Characterization of **cotton fabrics** treated with
 glyoxal and **glutaraldehyde**
 AU Choi, Hyung-Min; Kim, Jung Hyun; Shin, Sangmoo
 CS Department of Textile Engineering, Soongsil University, Seoul, 156-743, S.
 Korea
 SO Journal of Applied Polymer Science (1999), 73(13), 2691-2699
 CODEN: JAPNAB; ISSN: 0021-8995
 PB John Wiley & Sons, Inc.
 DT Journal
 LA English
 CC 40-4 (**Textiles** and **Fibers**)
 AB Comparison was made for glyoxal- and **glutaraldehyde**-treated
cotton fabrics. Crosslinking efficiency between
 cellulose and dialdehyde measured by wrinkle recovery angle was higher
 with **glutaraldehyde** than with glyoxal. This disparity was
 presumably due to different forms of two dialdehydes in aq. soln. that
 were confirmed by FTIR and UV-visible spectroscopies. Such difference in
 hydrated forms along with easy formation of oligomeric and polymeric forms
 in glyoxal could influence on sorption and reactivity of the dialdehydes
 with cellulose. **Staining** and water imbibition values and
 various thermal parameters, such as percent residue, differential
 thermogravimetric peak temp., and max. rate of wt. loss, also supported
 high crosslinking efficiency of **glutaraldehyde**. The presence of
 unreacted aldehyde groups within the treated **fabrics** was
 confirmed by FTIR anal.
 ST **cotton fabric** glyoxal **glutaraldehyde**
 treatment
 IT Crosslinking
 Crosslinking agents
Staining, coloring
 (characterization of **cotton fabrics** treated with
 glyoxal and **glutaraldehyde** as crosslinking agents)
 IT **Textiles**
 (**cotton**; characterization of **cotton fabrics**
 treated with glyoxal and **glutaraldehyde** as crosslinking
 agents)
 IT Polymer degradation
 (thermal; characterization of **cotton fabrics**
 treated with glyoxal and **glutaraldehyde** as crosslinking
 agents)
 IT Imbibition
 (water; characterization of **cotton fabrics** treated
 with glyoxal and **glutaraldehyde** as crosslinking agents)
 IT 107-22-2, Glyoxal 111-30-8, **Glutaraldehyde**
 RL: MOA (Modifier or additive use); USES (Uses)
 (crosslinking agent; characterization of **cotton**
fabrics treated with glyoxal and **glutaraldehyde** as
 crosslinking agents)
 RE.CNT 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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- (18) Whipple, E; J Org Chem 1974, V39, P1666 HCAPLUS

IT 111-30-8, Glutaraldehyde

RL: MOA (Modifier or additive use); USES (Uses)
 (crosslinking agent; characterization of **cotton fabrics** treated with glyoxal and **glutaraldehyde** as crosslinking agents)

RN 111-30-8 HCAPLUS

CN Pentanedial (9CI) (CA INDEX NAME)

OHC-(CH₂)₃-CHO

=> fil dpci

FILE 'DPCI' ENTERED AT 19:14:13 ON 25 FEB 2003

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FILE LAST UPDATED: 24 FEB 2003 <20030224/UP>

PATENTS CITATION INDEX, COVERS 1973 TO DATE

>>> LEARNING FILE LDPCI AVAILABLE <<<

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L67 ANSWER 1 OF 1 DPCI (C) 2003 THOMSON DERWENT

AN 1999-430249 [36] DPCI

DNC C1999-126793

TI A method for assaying for a preferred enzyme in the production of specific detergents.

DC D16 D25

IN COLLIER, K D; KELLIS, J T; NADHERNY, J; NAKI, D P; SCHELLENBERGER, V

PA (GEMV) GENENCOR INT INC

CYC 82

PI WO 9934011 A2 19990708 (199936)* EN 13p C12Q001-00 <--

RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL
 OA PT SD SE SZ UG ZW

W: AL AM AT AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GE GH
 GM HR HU ID IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK
 MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG US
 UZ VN YU ZW

AU 9922070 A 19990719 (199951) C12Q001-00
 EP 1042501 A2 20001011 (200052) EN C12Q001-00
 R: BE DE DK ES FI FR GB IT NL
 JP 2002500019 W 20020108 (200206) 22p C12Q001-25
 ADT WO 9934011 A2 WO 1998-US27629 19981223; AU 9922070 A AU 1999-22070
 19981223; EP 1042501 A2 EP 1998-966092 19981223, WO 1998-US27629 19981223;
 JP 2002500019 W WO 1998-US27629 19981223, JP 2000-526665 19981223
 FDT AU 9922070 A Based on WO 9934011; EP 1042501 A2 Based on WO 9934011; JP
 2002500019 W Based on WO 9934011
 PRAI US 1997-68796P 19971224
 IC ICM C12Q001-00; C12Q001-25
 ICA C11D003-386
 FS CPI

CTCS CITATION COUNTERS

PNC.DI	0	Cited Patents Count (by inventor)
PNC.DX	10	Cited Patents Count (by examiner)
IAC.DI	0	Cited Issuing Authority Count (by inventor)
IAC.DX	3	Cited Issuing Authority Count (by examiner)
PNC.GI	0	Citing Patents Count (by inventor)
PNC.GX	0	Citing Patents Count (by examiner)
IAC.GI	0	Citing Issuing Authority Count (by inventor)
IAC.GX	0	Citing Issuing Authority Count (by examiner)
CRC.I	0	Cited Literature References Count (by inventor)
CRC.X	0	Cited Literature References Count (by examiner)

CDP CITED PATENTS

UPD: 20000328

Cited by Examiner

CITING PATENT	CAT	CITED PATENT	ACCNO
WO 9934011	A X	EP 352244	A 1990-024609/04
	PA:	(BERP) BEROL NOBEL NACKA AB; (NOVO) NOVO-NORDISK AS	
	IN:	AASLYNG, D; PALICKA, J	
	X	EP 739982	A 1996-478746/48
	PA:	(GEMV) GENENCOR INT INC; (GEMV) GENENCOR INT	
	IN:	VAN, SOLINGEN P; LENTING, H B M; MAURER, K; VAN, BECKHOVEN R F W; WEISS, A; KOTTWITZ, B; VAN, BECKHOVEN R F W C	
	X	US 5612306	A 1997-192138/17
	PA:	(JOHS) JOHNSON & SON INC S C	
	IN:	GIPP, M M; O'BRIEN, J A	
	X	WO 9305134	A 1993-100965/12
	PA:	(NOVO) NOVO-NORDISK AS	
	IN:	AASLYNG, D; DAMBMANN, C; OUTTRUP, H; PATKAR, S; AASLYNG, D A; PATKAR, S A	
	X	WO 9510615	A 1995-161800/21
	PA:	(GEMV) GENENCOR INT INC	
	IN:	BOTT, R R; GRAYCAR, T P; WILSON, L J	
	X	WO 9707202	A 1997-165287/15
	PA:	(NOVO) NOVO-NORDISK AS	
	IN:	BORCH, K; KRETZSCHMAR, T; OKKELS, J S; PATKAR, S A; PETERSEN, D A; ROYER, J C; SVENDSEN, A; THELLERSEN, M	
	X	WO 9723593	A 1997-351039/32
	PA:	(PROC) PROCTER & GAMBLE CO	
	IN:	CULLEN, K	
	X	WO 9741212	A 1997-549717/50

PA: (NOVO) NOVO-NORDISK AS
 IN: BORCH, K; HALKIER, T; HIRAYAMA, S; NIELSEN, B R;
 OXENBOLL, K M; SANDAL, T; TAIRA, R; NIELSEN, B
 E WO 9911769 A 1999-205176/17
 PA: (NOVO) NOVO-NORDISK AS
 IN: ANDERSEN, K V; BAUDITZ, P; HANSEN, P K; MIKKELSEN, F
 E WO 9911770 A 1999-205177/17
 PA: (NOVO) NOVO-NORDISK AS
 IN: ANDERSEN, K V; BAUDITZ, P; HANSEN, P K; MIKKELSEN, F

=> fil hcaplus

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FILE COVERS 1907 - 25 Feb 2003 VOL 138 ISS 9
 FILE LAST UPDATED: 24 Feb 2003 (20030224/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

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L70 ANSWER 1 OF 12 HCAPLUS COPYRIGHT 2003 ACS
 AN 2002:960617 HCAPLUS
 DN 138:35295
 TI Lipolytic enzyme modified variants with improved wash performance
 IN Fuglsang, Claus Crone; Okkels, Jens Sigurd; Petersen, Dorte Aaby; Patkar, Shamkant Anant; Thellersen, Marianne; Svendsen, Allan; Borch, Kim; Royer, John C.; Kretzschmar, Titus; Halkier, Torben; Vind, Jesper; Jorgensen, Steen Troels
 PA Novozyme A/S, Den.
 SO U.S., 120 pp., Cont.-in-part of WO 97 7,202.
 CODEN: USXXAM
 DT Patent
 LA English
 IC ICM C12N009-20
 NCL 435198000; 435195000; 435196000; 435197000
 CC 7-5 (Enzymes)
 Section cross-reference(s): 3, 46
 FAN.CNT 4

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6495357	B1	20021217	US 1998-7288	19980114
	WO 9704079	A1	19970206	WO 1996-DK322	19960712
	W:	AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG			

RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR,
 IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA
 WO 9707202 A1 19970227 WO 1996-DK341 19960812 <--

W: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE,
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 LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD,
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 KG, KZ, MD, RU, TJ, TM

RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR,
 IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA

PRAI DK 1995-832 A 19950714
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 DK 1995-1096 A 19950929
 DK 1995-1306 A 19951121
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 US 1996-11634P P 19960214
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 DK 1996-374 A 19960401
 US 1996-16754P P 19960507
 US 1996-20461P P 19960507
 WO 1996-DK322 A2 19960712
 WO 1996-DK341 A2 19960812

AB The present invention relates to modified enzymes with lipolytic activity capable of removing a substantial amt. of fatty matter in a one-cycle wash. Variants were constructed by random and site-directed mutagenesis and/or N- or C-terminal peptide addn. using lipases from *Humicola lanuginosa*, *H. insolens*, *Pseudomonas cepacia* (also known as *Burkholderia cepacia*), and *Absidia reflexa*. DNA sequences encoding said enzymes, vectors comprising said DNA sequence, host cells harboring said DNA sequence or said vector, and a process for producing said enzymes with lipolytic activity are also provided.

ST lipase mutagenesis wash detergent performance; *Humicola* lipase mutagenesis wash detergent; *Pseudomonas* lipase mutagenesis wash detergent; *Absidia* lipase mutagenesis wash detergent

IT *Absidia reflexa*
Burkholderia cepacia
 DNA sequences
 DNA shuffling
 Detergents
 Fermentation
Humicola insolens
 Molecular cloning
 Protein engineering
 Protein sequences
Thermomyces lanuginosus

(lipolytic enzyme modified variants with improved wash performance)

IT Signal peptides
 RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)

(lipolytic enzyme modified variants with improved wash performance)

IT Mutagenesis
 (random; lipolytic enzyme modified variants with improved wash performance)

IT Mutagenesis
 (site-directed; lipolytic enzyme modified variants with improved wash performance)

IT *Aspergillus oryzae*
Escherichia coli

Fusarium graminearum

Saccharomyces cerevisiae

(transgenic expression host for modified enzyme prodn.; lipolytic enzyme modified variants with improved wash performance)

IT Hormones, microbial
 RL: BSU (Biological study, unclassified); BIOL (Biological study)
 (.alpha.1-factor, signal peptide of; lipolytic enzyme modified variants
 with improved wash performance)

IT 9001-62-1P, Lipase
 RL: BPN (Biosynthetic preparation); BSU (Biological study, unclassified);
 PRP (Properties); TEM (Technical or engineered material use); BIOL
 (Biological study); PREP (Preparation); USES (Uses)
 (Lipolase and Liposam; lipolytic enzyme modified variants with improved
 wash performance)

IT 477828-49-2DP, variants 477828-50-5DP, variants 477829-87-1P
 477829-88-2P 477829-89-3P 477829-90-6P 477829-91-7P 477829-92-8P
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 477926-44-6P 477926-45-7P 478431-26-4P

RL: BPN (Biosynthetic preparation); BSU (Biological study, unclassified);
 PRP (Properties); TEM (Technical or engineered material use); BIOL
 (Biological study); PREP (Preparation); USES (Uses)
 (amino acid sequence; lipolytic enzyme modified variants with improved
 wash performance)

IT 187721-87-5DP, N- or C-terminal extension on lipase 187721-90-0DP, N- or
 C-terminal extension on lipase 187721-95-5DP, N- or C-terminal extension
 on lipase 187722-02-7DP, N- or C-terminal extension on lipase
 187722-07-2DP, N- or C-terminal extension on lipase 187722-11-8DP, N- or
 C-terminal extension on lipase 187722-16-3DP, N- or C-terminal extension
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RL: BPN (Biosynthetic preparation); BSU (Biological study, unclassified); PRP (Properties); TEM (Technical or engineered material use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(lipolytic enzyme modified variants with improved wash performance)

IT 478431-23-1 478431-24-2 478431-25-3
RL: BUU (Biological use, unclassified); PRP (Properties); BIOL (Biological study); USES (Uses)

(nucleotide sequence; lipolytic enzyme modified variants with improved wash performance)

IT 478473-06-2 478473-07-3 478473-08-4, 3: PN: US6495357 SEQID: 3
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unclaimed DNA 478473-11-9 478473-12-0 478473-13-1, 8: PN: US6495357
SEQID: 8 unclaimed DNA 478473-14-2, 9: PN: US6495357 SEQID: 9 unclaimed
DNA 478473-15-3 478473-16-4 478473-17-5 478473-18-6 478473-19-7
478473-20-0 478473-21-1 478473-22-2 478473-23-3 478473-24-4
478473-25-5 478473-26-6 478473-27-7 478473-28-8 478473-29-9
478473-30-2 478473-31-3 478473-32-4 478473-33-5 478473-34-6
478473-35-7 478473-36-8 478473-37-9 478473-38-0 478473-39-1
478473-40-4 478473-41-5 478473-42-6 478473-43-7 478473-44-8
478473-45-9 478473-46-0 478473-47-1 478473-48-2 478473-49-3
478473-50-6 478473-51-7 478473-54-0 478473-55-1 478473-56-2
478473-57-3 478473-58-4 478473-59-5 478473-60-8 478473-61-9
478473-62-0 478473-63-1 478473-64-2 478473-65-3 478473-67-5
478473-68-6 478473-69-7 478473-70-0 478473-72-2

RL: PRP (Properties)

(unclaimed nucleotide sequence; lipolytic enzyme modified variants with improved wash performance)

IT 478473-52-8 478473-53-9 478473-66-4 478473-71-1 478473-73-3

RL: PRP (Properties)

(unclaimed protein sequence; lipolytic enzyme modified variants with improved wash performance)

IT 187721-87-5 187723-14-4 478336-95-7 478336-96-8 478336-97-9

478336-98-0 478336-99-1 478337-00-7 478337-01-8 478337-02-9
 478337-03-0 478337-04-1 478337-05-2 478337-06-3 478337-07-4
 478337-09-6 478337-11-0 478337-13-2 478337-15-4 478337-16-5
 478337-19-8 478337-20-1 478337-22-3

RL: PRP (Properties)

(unclaimed sequence; lipolytic enzyme modified variants with improved wash performance)

RE.CNT 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD
 RE

- (1) Anon; EP 0214761 1987 HCAPLUS
- (2) Anon; WO 9205249 1992 HCAPLUS
- (3) Anon; WO 9301285 1993 HCAPLUS
- (4) Anon; WO 9403578 1994 HCAPLUS
- (5) Anon; WO 9414964 1994 HCAPLUS
- (6) Anon; WO 9425578 1994 HCAPLUS
- (7) Asahi Kasei Kogyo Kk; JP 6113845
- (8) Lunn, C; M in Enzym 1986, V125, P138 HCAPLUS
- (9) Svendsen; US 5892013 A 1999 HCAPLUS

L70 ANSWER 2 OF 12 HCAPLUS COPYRIGHT 2003 ACS
 AN 1999:189188 HCAPLUS

DN 130:219878

TI Protease variants and compositions for use in detergents

IN Hansen, Peter Kamp; Bauditz, Peter; Mikkelsen, Frank; Andersen, Kim
 Vilbour

PA Novo Nordisk A/S, Den.

SO PCT Int. Appl., 70 pp.

CODEN: PIXXD2

DT Patent

LA English

IC ICM C12N009-54

CC 7-5 (Enzymes)

Section cross-reference(s): 46

FAN.CNT 1

PATENT NO.

KIND

DATE

APPLICATION NO.

DATE

PI	WO 9911770	A1	19990311	WO 1998-DK361	19980819 <--
	W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	CA 2301785	AA	19990311	CA 1998-2301785	19980819
	AU 9890618	A1	19990322	AU 1998-90618	19980819
	EP 1007646	A1	20000614	EP 1998-942501	19980819
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, NL, SE, PT, IE, FI				
	BR 9811396	A	20000822	BR 1998-11396	19980819
	JP 2001514847	T2	20010918	JP 2000-508781	19980819
PRAI	DK 1997-988	A	19970829		
	WO 1998-DK361	W	19980819		

AB Enzymes produced by mutating the genes for a no. of subtilases and expressing the mutated genes in suitable hosts are presented. V93T/G95T/A96E and G975/A96V combinations of the Val-95, Gly-97, and Ala-98 residues of Savinase (subtilisin 309 from Bacillus lentus) were identified with improved wash performance in any detergent in comparison to the wild-type parent enzyme.

ST subtilase mutagenesis detergent; proteinase mutagenesis detergent; Savinase mutagenesis sequence detergent

IT Detergents

(dishwashing; protease variants and compns. for use in detergents)

IT Detergents
 (laundry; protease variants and compns. for use in detergents)

IT Protein sequences
 (of Savinase variants and compns. for use in detergents)

IT Molecular cloning
 Protein engineering
 (protease variants and compns. for use in detergents)

IT Fermentation
 (protein; protease variants and compns. for use in detergents)

IT Aspergillus
 Bacillus (bacterium genus)
 Bacillus lentus
 Bacteria (Eubacteria)
 Filamentous fungi
 Fungi
 (recombinant host for prodn.; protease variants and compns. for use in detergents)

IT Mutagenesis
 (site-directed; protease variants and compns. for use in detergents)

IT 125957-85-9DP, Subtilisin (Bacillus lentus clone pSX86), mutants
 220975-92-8P 220975-93-9P 221037-22-5P
 RL: BPN (Biosynthetic preparation); MOA (Modifier or additive use); NUU
 (Other use, unclassified); PUR (Purification or recovery); BIOL
 (Biological study); PREP (Preparation); USES (Uses)
 (amino acid sequence; protease variants and compns. for use in detergents)

IT 9000-92-4, Amylase 9001-62-1, Lipase 9001-92-7, Proteinase
 9012-54-8, Cellulase 9055-15-6, Oxidoreductase 51377-41-4, Cutinase
 RL: MOA (Modifier or additive use); USES (Uses)
 (detergent compns. contg.; protease variants and compns. for use in detergents)

IT 9014-01-1DP, Savinase, mutants 180984-02-5DP, Subtilase, mutants
 RL: BPN (Biosynthetic preparation); MOA (Modifier or additive use); NUU
 (Other use, unclassified); PUR (Purification or recovery); BIOL
 (Biological study); PREP (Preparation); USES (Uses)
 (protease variants and compns. for use in detergents)

RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE
 (1) Genentech Inc; EP 0251446 A2 1988 HCAPLUS
 (2) Gist-Brocades N V; WO 9402618 A1 1994 HCAPLUS
 (3) The Procter & Gamble Company; WO 9530011 A2 1995 HCAPLUS
 (4) Unilever Plc; EP 0405901 A1 1991 HCAPLUS

L70 ANSWER 3 OF 12 HCAPLUS COPYRIGHT 2003 ACS

AN 1999:189187 HCAPLUS

DN 130:206698

TI Protease variants and compositions for use in detergents

IN Hansen, Peter Kamp; Bauditz, Peter; Mikkelsen, Frank; Andersen, Kim
 Vilbour

PA Novo Nordisk A/S, Den.

SO PCT Int. Appl., 69 pp.

CODEN: PIXXD2

DT Patent

LA English

IC ICM C12N009-54

CC 7-5 (Enzymes)

Section cross-reference(s): 46

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9911769	A1	19990311	WO 1998-DK360	19980819 <--
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG,				

KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX,
 NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT,
 UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
 RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES,
 FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI,
 CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

CA 2301767	AA	19990311	CA 1998-2301767	19980819
AU 9890617	A1	19990322	AU 1998-90617	19980819
EP 1012251	A1	20000628	EP 1998-942500	19980819

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, NL, SE, PT, IE, FI

BR 9811412	A	20000822	BR 1998-11412	19980819
JP 2001514846	T2	20010918	JP 2000-508780	19980819

PRAI DK 1997-987 A 19970829
 WO 1998-DK360 W 19980819

AB Enzymes produced by mutating the genes for a no. of subtilases and
 expressing the mutated genes in suitable hosts are presented. Numerous
 combinations of Thr-134 and Gln-137 residue mutants of Savinase
 (subtilisin 309 from *Bacillus lentus*) were intensively studied and a no.
 of variants identified with improved wash performance.

ST subtilase mutagenesis detergent; proteinase mutagenesis detergent;
 Savinase mutagenesis sequence detergent

IT Detergents
 (dishwashing; protease variants and compns. for use in detergents)

IT Detergents
 (laundry; protease variants and compns. for use in detergents)

IT Protein sequences
 (of Savinase variants and compns. for use in detergents)

IT Molecular cloning
 Protein engineering
 (protease variants and compns. for use in detergents)

IT Fermentation
 (protein; protease variants and compns. for use in detergents)

IT Aspergillus
 Bacillus (bacterium genus)
 Bacillus lentus
 Bacteria (Eubacteria)
 Filamentous fungi
 Fungi
 (recombinant host for prodn.; protease variants and compns. for use in
 detergents)

IT Mutagenesis
 (site-directed; protease variants and compns. for use in detergents)

IT 125957-85-9DP, Subtilisin (*Bacillus lentus* clone pSX86), mutants
 220978-11-0P 220978-21-2P 220978-23-4P 220978-26-7P 220978-27-8P
 220978-31-4P 220978-37-0P 220978-55-2P 220978-90-5P 220979-05-5P
 220979-17-9P

RL: BPN (Biosynthetic preparation); MOA (Modifier or additive use); NUU
 (Other use, unclassified); PUR (Purification or recovery); BIOL
 (Biological study); PREP (Preparation); USES (Uses)
 (amino acid sequence; protease variants and compns. for use in
 detergents)

IT 9000-92-4, Amylase 9001-62-1, Lipase 9001-92-7, Proteinase
 9012-54-8, Cellulase 9055-15-6, Oxidoreductase 51377-41-4, Cutinase
 RL: MOA (Modifier or additive use); USES (Uses)
 (detergent compns. contg.; protease variants and compns. for use in
 detergents)

IT 9014-01-1DP, Savinase, mutants 180984-02-5DP, Subtilase, mutants
 RL: BPN (Biosynthetic preparation); MOA (Modifier or additive use); NUU
 (Other use, unclassified); PUR (Purification or recovery); BIOL
 (Biological study); PREP (Preparation); USES (Uses)
 (protease variants and compns. for use in detergents)

RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD
 RE

- (1) Gist-Brocades, N; WO 9402618 A1 1994 HCAPLUS
- (2) Novo Nordisk A/S; WO 9634946 A1 1996 HCAPLUS
- (3) Siezen, R; Protein Eng 1993, V6(8), P927 HCAPLUS
- (4) Unilever NV; WO 9634935 A2 1996 HCAPLUS
- (5) Unilever PLC; EP 0405901 A1 1991 HCAPLUS

L70 ANSWER 4 OF 12 HCAPLUS COPYRIGHT 2003 ACS

AN 1997:740293 HCAPLUS

DN 128:19393

TI Cloning and expression of cDNA for alkaline lipolytic **enzymes** of filamentous fungi and lipolytic **enzyme**-containing detergent compositions

IN Hirayama, Satoshi; Taira, Rikako; Borch, Kim; Sandal, Thomas; Halkier, Torben; Oxenboll, Karen M.; Nielsen, Bjarne Ronfeldt

PA Novo Nordisk A/S, Den.; Hirayama, Satoshi; Taira, Rikako; Borch, Kim; Sandal, Thomas; Halkier, Torben; Oxenboll, Karen M.; Nielsen, Bjarne Ronfeldt

SO PCT Int. Appl., 70 pp.

CODEN: PIXXD2

DT Patent

LA English

IC ICM C12N009-20

ICS C12N001-21; C11D003-386

CC 3-3 (Biochemical Genetics)

Section cross-reference(s): 7, 10, 46

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9741212	A1	19971106	WO 1997-DK179	19970422 <--
	W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
	AU 9723823	A1	19971119	AU 1997-23823	19970422
	EP 897423	A1	19990224	EP 1997-919299	19970422
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, NL, SE, PT, IE, FI				
	US 6350604	B1	20020226	US 1998-177234	19981022
PRAI	DK 1996-500	A	19960425		
	DK 1996-501	A	19960425		
	WO 1997-DK179	W	19970422		
AB	Lipolytic enzymes with high activity at alk. pH in the absence of Ca ²⁺ can be obtained from filamentous fungi of the genera Gliocladium, Verticillium and Trichophaea. These lipolytic enzymes are effective for improving the effect of detergents. The lipolytic enzymes have a good washing performance, as expressed by the hydrolysis of oil on textile swatches. The amino acid sequences of the lipolytic enzymes are highly homologous. The cDNAs for these enzymes were expressed in Aspergillus oryzae.				
ST	sequence Gliocladium Verticillium Trichophaea lipase cDNA; detergent compn				
IT	Gliocladium Verticillium Trichophaea lipase				
	Clonostachys rosea				
	Detergents				
	Gliocladium				
	Gliocladium ammoniophilum				
	Gliocladium aureum				
	Gliocladium catenulatum				
	Gliocladium flavum				
	Gliocladium nigrovirens				
	Gliocladium sagariensis				

Gliocladium solani
 Molecular cloning
 Trichophaea
 Trichophaea saccata
 Verticillium
 (cloning and expression of cDNA for alk. lipolytic **enzymes** of filamentous fungi and lipolytic **enzyme**-contg. detergent compns.)
 IT Escherichia coli
 (cloning host; cloning and expression of cDNA for alk. lipolytic **enzymes** of filamentous fungi and lipolytic **enzyme**-contg. detergent compns.)
 IT Aspergillus
 Aspergillus oryzae
 Eukaryote (Eukaryotae)
 Filamentous fungi
 Fungi
 Yeast
 (expression host; cloning and expression of cDNA for alk. lipolytic **enzymes** of filamentous fungi and lipolytic **enzyme**-contg. detergent compns.)
 IT cDNA sequences
 (for alk. lipolytic **enzymes** of Gliocladium, Verticillium and Trichophaea saccata)
 IT Protein sequences
 (of alk. lipolytic **enzymes** of Gliocladium, Verticillium and Trichophaea saccata)
 IT Plasmids
 (pA2L114; cloning and expression of cDNA for alk. lipolytic **enzymes** of filamentous fungi and lipolytic **enzyme**-contg. detergent compns.)
 IT Plasmids
 (pA2L123; cloning and expression of cDNA for alk. lipolytic **enzymes** of filamentous fungi and lipolytic **enzyme**-contg. detergent compns.)
 IT Plasmids
 (pC1L160; cloning and expression of cDNA for alk. lipolytic **enzymes** of filamentous fungi and lipolytic **enzyme**-contg. detergent compns.)
 IT 199455-31-7P 199455-33-9P 199455-35-1P 199455-36-2P 199455-37-3P
 199455-38-4P
 RL: NUU (Other use, unclassified); PRP (Properties); PUR (Purification or recovery); PREP (Preparation); USES (Uses)
 (amino acid sequence; cloning and expression of cDNA for alk. lipolytic **enzymes** of filamentous fungi and lipolytic **enzyme**-contg. detergent compns.)
 IT 9001-62-1P, Lipase 51377-41-4P, Cutinase
 RL: NUU (Other use, unclassified); PRP (Properties); PUR (Purification or recovery); PREP (Preparation); USES (Uses)
 (cloning and expression of cDNA for alk. lipolytic **enzymes** of filamentous fungi and lipolytic **enzyme**-contg. detergent compns.)
 IT 199455-30-6 199455-32-8 199455-34-0 199455-39-5 199455-40-8
 199455-41-9
 RL: BUU (Biological use, unclassified); PRP (Properties); BIOL (Biological study); USES (Uses)
 (nucleotide sequence; cloning and expression of cDNA for alk. lipolytic **enzymes** of filamentous fungi and lipolytic **enzyme**-contg. detergent compns.)
 L70 ANSWER 5 OF 12 HCAPLUS COPYRIGHT 2003 ACS
 AN 1997:506585 HCAPLUS
 DN 127:137384

TI Enzyme-containing detergent composition with delayed-release mechanism for
a chelating agent
IN Cullen, Kevin
PA Procter and Gamble Company, USA; Cullen, Kevin
SO PCT Int. Appl., 67 pp.
CODEN: PIXXD2

DT Patent

LA English

IC ICM C11D003-386

ICS C11D003-36; C11D003-37

CC 46-5 (Surface Active Agents and Detergents)

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9723593	A1	19970703	WO 1996-US16558	19961015 <--

W: BR, CA, MX, US

PRAI GB 1995-20923 19951012

AB A detergent compn. contains (a) an enzyme and (b) a Ca chelating agent, wherein a means is provided for delaying the release to a wash soln. of the chelating agent relative to the release of the enzyme. The detergent compn. is preferably free of bleach. For example, Dequest 2060 as a chelating agent was coated with 2.5% Na silicate to delay its dissoln. in the wash water.

ST enzyme detergent chelator delayed release

IT Chelating agents

Detergents

(enzyme-contg. detergent with delayed-release chelating agent for calcium)

IT Enzymes, uses

RL: TEM (Technical or engineered material use); USES (Uses)

(enzyme-contg. detergent with delayed-release chelating agent for calcium)

IT 60-00-4, EDTA, uses 2809-21-4, 1-Hydroxyethylidenediphosphonic acid 15827-60-8, Dequest 2060

RL: MOA (Modifier or additive use); USES (Uses)

(coated; enzyme-contg. detergent with delayed-release chelating agent for calcium)

IT 1344-09-8, Sodium silicate

RL: TEM (Technical or engineered material use); USES (Uses)

(enzyme-contg. detergent with calcium chelating agent coated with)

IT 9001-62-1, Lipase 9001-92-7, Protease

RL: TEM (Technical or engineered material use); USES (Uses)

(enzyme-contg. detergent with delayed-release chelating agent for calcium)

L70 ANSWER 6 OF 12 HCAPLUS COPYRIGHT 2003 ACS

AN 1997:260090 HCAPLUS

DN 126:279342

TI Stable **enzyme**-containing aqueous laundry prespotting composition

IN O'Brien, Jeanne A.; Gipp, Mark M.

PA S. C. Johnson & Son, Inc., USA

SO U.S., 7 pp., Cont.-in-part of U.S. Ser. No. 215,219, abandoned.

CODEN: USXXAM

DT Patent

LA English

IC ICM C11D003-386

NCL 510321000

CC 46-6 (Surface Active Agents and Detergents)

FAN.CNT 2

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5612306	A	19970318	US 1995-539647	19951005 <--
CA 2161975	AA	19950928	CA 1995-2161975	19950320

PRAI US 1994-215219 19940321

AB The title compn. includes at least one detergent **enzyme** in an amt. effective to reduce **fabric stains**; an **enzyme** stabilizing system effective to preserve the detergent **enzyme** for at least 12 wk at at least 90.degree.F. in an amt. effective to reduce **fabric stains**, the **enzyme** stabilizing system including at least one chelating agent (e.g., citric acid) and at least one nonionic surfactant, with no addnl. **enzyme** stabilizer; and an aq. carrier.

ST laundry prespotting compn **enzyme** stabilization; citric acid stabilizer **enzyme**; nonionic surfactant stabilizer **enzyme**

IT **Enzymes**, uses
RL: TEM (Technical or engineered material use); USES (Uses) (detergent; stable **enzyme**-contg. aq. laundry prespotting compn.)

IT Alcohols, uses
Alcohols, uses
RL: TEM (Technical or engineered material use); USES (Uses) (fatty, ethoxylated; stable **enzyme**-contg. aq. laundry prespotting compn.)

IT Detergents
(laundry; stable **enzyme**-contg. aq. laundry prespotting compn.)

IT Surfactants
(nonionic; stable **enzyme**-contg. aq. laundry prespotting compn.)

IT Stabilizing agents
(stable **enzyme**-contg. aq. laundry prespotting compn.)

IT 9001-92-7, Protease
RL: TEM (Technical or engineered material use); USES (Uses) (Durazym 16.0 L Type EX; stable **enzyme**-contg. aq. laundry prespotting compn.)

IT 77-92-9, Citric acid, uses 9016-45-9, Ethoxylated nonylphenol 9036-19-5, Ethoxylated octylphenol
RL: TEM (Technical or engineered material use); USES (Uses) (stable **enzyme**-contg. aq. laundry prespotting compn.)

L70 ANSWER 7 OF 12 HCAPLUS COPYRIGHT 2003 ACS

AN 1997:257466 HCAPLUS

DN 126:235236

TI Novel lipolytic **enzyme** muteins designed for one-wash detergent compositions for the removal of fatty **materials**

IN Okkels, Jens Sigurd; Svendsen, Allan; Borch, Kim; Thellersen, Marianne; Patkar, Shamkant Anant; Petersen, Dorte Aaby; Royer, John C.; Kretzschmar, Titus

PA Novo Nordisk A/s, Den.; Okkels, Jens Sigurd; Svendsen, Allan; Borch, Kim; Thellersen, Marianne; Patkar, Shamkant Anant; Petersen, Dorte Aaby; Royer, John C.; Kretzschmar, Titus

SO PCT Int. Appl., 275 pp.

CODEN: PIXXD2

DT Patent

LA English

IC ICM C12N009-20

ICS C11D003-386

CC 7-2 (Enzymes)

Section cross-reference(s): 3, 46

FAN.CNT 4

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9707202	A1	19970227	WO 1996-DK341	19960812 <--
W: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD,				

SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, US, UZ, VN, AM, AZ, BY,
 KG, KZ, MD, RU, TJ, TM
 RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR,
 IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA

AU 9666551	A1	19970312	AU 1996-66551	19960812
EP 851913	A1	19980708	EP 1996-926323	19960812
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, NL, SE, PT, IE, FI				
CN 1192780	A	19980909	CN 1996-196233	19960812
JP 11510699	T2	19990921	JP 1996-508840	19960812
US 6495357	B1	20021217	US 1998-7288	19980114
PRAI DK 1995-905	A	19950811		
DK 1995-1096	A	19950929		
US 1996-11627P	P	19960214		
DK 1996-374	A	19960401		
US 1996-16754P	P	19960507		
DK 1995-832	A	19950714		
DK 1995-1013	A	19950913		
DK 1995-1306	A	19951121		
US 1996-11634P	P	19960214		
DK 1996-372	A	19960401		
US 1996-20461P	P	19960507		
WO 1996-DK322	A2	19960712		
WO 1996-DK341	W	19960812		

AB Novel lipolytic **enzymes** are disclosed which are capable of removing substantial amts. of lard from a lard-stained swatch in a one-cycle wash performed under realistic washing conditions. Preferred lipolytic **enzymes** are variants of the *Humicola lanuginosa* lipase which may be prepd. by recombinant DNA techniques. Random mutagenized libraries of the entire *H. lanuginosa* lipase gene and of the lid domain (amino acids 91-97) and hydrophobic cleft region (amino acids 206-211), regions known to be important for wash performance, were constructed and screened using the Dobanol 25-7 and low-calcium assays. Twenty variants having very good washing performance were allowed to recombine by an in vivo recombination method in *Saccharomyces cerevisiae* YNG318. N-terminal peptides with low susceptibility to proteolytic degrdn. were added to the lipase muteins and further subjected to random mutagenesis. Cloning and fermn. procedures are described for the prodn. of the *H. lanuginosa* lipase muteins in *Aspergillus oryzae* and *Fusarium graminearum*. Construction of *Absidia reflexa* and *Pseudomonas* lipase mutants is also described. The **enzymes** are advantageously used in detergent compns. Thus, the *H. lanuginosa* lipase contg. an N-terminal SPIRPRP peptide replacing the E1 residues, and the substitutions D57G, N94K, D96L, L97M and Q249R removed 46% of lard at 12,500 Units/L, in comparison to 0-7% removal by various com. lipases.

ST fatty **material** removal detergent lipase mutein; *Humicola* lipase mutein lipase; *Absidia* lipase mutein lipase; *Pseudomonas* lipase mutein lipase; mutagenesis lipase detergent lard removal

IT DNA sequences
 (encoding lipolytic **enzyme** muteins designed for one-wash detergent compns. for the removal of fatty **materials**)

IT Detergents
 Genetic vectors
 Molecular cloning
 Mutagenesis
 Plasmid vectors
 Virus vectors
 (lipolytic **enzyme** muteins designed for one-wash detergent compns. for the removal of fatty **materials**)

IT Lard
 RL: REM (Removal or disposal); PROC (Process)
 (lipolytic **enzyme** muteins designed for one-wash detergent compns. for the removal of fatty **materials**)

IT Protein sequences

- (of lipolytic **enzyme** muteins designed for one-wash detergent compns. for the removal of fatty **materials**)
- IT Absidia reflexa
Pseudomonas
Thermomyces lanuginosus
(original **enzyme** source; lipolytic **enzyme** muteins designed for one-wash detergent compns. for the removal of fatty **materials**)
- IT Fermentation
(protein; lipolytic **enzyme** muteins designed for one-wash detergent compns. for the removal of fatty **materials**)
- IT Aspergillus
Aspergillus nidulans
Aspergillus niger
Aspergillus oryzae
Bacilli
Bacillus alcalophilus
Bacillus amyloliquefaciens
Bacillus circulans
Bacillus coagulans
Bacillus lentus
Bacillus licheniformis
Bacillus stearothermophilus
Bacillus subtilis
Bacillus thuringiensis
Brevibacillus brevis
Fusarium
Fusarium graminearum
Paenibacillus lautus
Saccharomyces
Saccharomyces cerevisiae
Streptomyces lividans
Streptomyces murinus
(recombinant expression host; lipolytic **enzyme** muteins designed for one-wash detergent compns. for the removal of fatty **materials**)
- IT 146636-01-3DP, muteins 182326-94-9DP, muteins
RL: BPN (Biosynthetic preparation); NUU (Other use, unclassified); PRP (Properties); BIOL (Biological study); PREP (Preparation); USES (Uses)
(amino acid sequence; lipolytic **enzyme** muteins designed for one-wash detergent compns. for the removal of fatty **materials**)
- IT 9000-92-4, Amylase 9001-92-7, Proteinase 9003-99-0, Peroxidase
9012-54-8, Cellulase 51377-41-4, Cutinase
RL: NUU (Other use, unclassified); USES (Uses)
(detergent additive; lipolytic **enzyme** muteins designed for one-wash detergent compns. for the removal of fatty **materials**)
- IT 9001-62-1P, Lipase
RL: BPN (Biosynthetic preparation); NUU (Other use, unclassified); BIOL (Biological study); PREP (Preparation); USES (Uses)
(lipolytic **enzyme** muteins designed for one-wash detergent compns. for the removal of fatty **materials**)
- IT 187855-44-3P 187951-85-5P 188418-65-7P 188418-66-8P 188418-67-9P
188418-68-0P 188418-69-1P 188418-70-4P 188418-71-5P 188418-72-6P
188418-73-7P 188418-74-8P 188418-75-9P 188418-76-0P 188418-77-1P
188418-78-2P 188418-79-3P 188418-80-6P 188418-81-7P 188418-82-8P
188418-83-9P 188418-84-0P 188418-85-1P 188418-86-2P 188418-87-3P
188418-88-4P 188418-89-5P 188418-90-8P 188418-91-9P 188418-92-0P
188418-93-1P 188418-94-2P 188418-95-3P 188418-96-4P 188418-97-5P
188418-98-6P 188418-99-7P 188419-00-3P 188419-01-4P 188419-02-5P
188419-03-6P 188419-04-7P 188419-05-8P 188419-06-9P 188419-07-0P
188419-08-1P 188419-09-2P 188419-10-5P 188419-11-6P 188419-12-7P

188419-13-8P 188419-14-9P 188419-15-0P 188419-16-1P 188419-17-2P
 188419-18-3P 188419-19-4P 188419-20-7P 188419-21-8P 188419-22-9P
 188419-23-0P 188419-24-1P 188419-25-2P 188419-26-3P 188419-27-4P
 188419-28-5P 188419-29-6P 188419-30-9P 188419-31-0P 188419-32-1P
 188419-33-2P 188419-34-3P 188419-35-4P 188419-36-5P 188419-37-6P
 188419-38-7P 188419-39-8P 188419-40-1P 188419-41-2P 188419-42-3P
 188419-43-4P 188419-44-5P 188419-45-6P 188419-46-7P 188419-47-8P
 188419-48-9P 188419-49-0P 188419-50-3P 188419-51-4P 188419-52-5P
 188419-53-6P 188419-54-7P 188419-55-8P 188419-56-9P 188419-57-0P
 188419-58-1P 188419-59-2P 188419-60-5P 188419-61-6P 188419-62-7P
 188419-63-8P 188419-64-9P 188496-05-1P 188496-06-2P 188496-07-3P

RL: BPN (Biosynthetic preparation); NUU (Other use, unclassified); PRP (Properties); BIOL (Biological study); PREP (Preparation); USES (Uses)
 (lipolytic **enzyme** muteins designed for one-wash detergent compns. for the removal of fatty **materials**)

IT 182326-93-8 188496-01-7

RL: BUU (Biological use, unclassified); PRP (Properties); BIOL (Biological study); USES (Uses)
 (nucleotide sequence; lipolytic **enzyme** muteins designed for one-wash detergent compns. for the removal of fatty **materials**)
)

L70 ANSWER 8 OF 12 HCAPLUS COPYRIGHT 2003 ACS

AN 1996:759106 HCAPLUS

DN 126:20425

TI Detergents comprising cellulases of Bacillus with improved performance

IN Lenting, Hermanus Bernardus Maria; Van Beckhoven, Rudolf Franciscus; Maurer, Karl-Heinz; Kottwitz, Beatrix; Weiss, Albrecht; Van Solingen, Pieter

PA **Genencor International, Inc., USA**; Lenting, Hermanus Bernardus Maria; Van Beckhoven, Rudolf Franciscus; Maurer, Karl-Heinz; Kottwitz, Beatrix; Weiss, Albrecht; Van Solingen, Pieter

SO PCT Int. Appl., 32 pp.

CODEN: PIXXD2

DT Patent

LA English

IC ICM C12N009-42

ICS C11D003-386

CC 46-5 (Surface Active Agents and Detergents)

Section cross-reference(s): 7, 10

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9634092	A2	19961031	WO 1996-EP1755	19960426
	WO 9634092	A3	19970227		
	W:	AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI			
	RW:	KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN			
	EP 739982	A1	19961030	EP 1995-201115	19950428 <--
	R:	NL			
	ZA 9603348	A	19961104	ZA 1996-3348	19960426
	AU 9656927	A1	19961118	AU 1996-56927	19960426
	AU 710006	B2	19990909		
	CA 2246622	AA	19970918	CA 1996-2246622	19960426
	WO 9734005	A1	19970918	WO 1996-US5651	19960426
	W:	AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, US, UZ, VN, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			

RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR,
IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML,
MR, NE, SN, TD, TG

AU 9657138	A1	19971001	AU 1996-57138	19960426
EP 827534	A2	19980311	EP 1996-914993	19960426
R: AT, BE, CH, DE, DK, ES, FR, GB, IT, LI, NL				
EP 888455	A1	19990107	EP 1996-915338	19960426
R: AT, BE, CH, DE, DK, ES, FR, GB, IT, LI, NL, FI				
JP 11504062	T2	19990406	JP 1996-532184	19960426
CN 1214082	A	19990414	CN 1996-180208	19960426
BR 9612547	A	19990720	BR 1996-12547	19960426
US 6063611	A	20000516	US 1997-732433	19970318
US 6313081	B1	20011106	US 1998-945574	19980227
US 2002128166	A1	20020912	US 2001-863547	20010523
PRAI EP 1995-201115	A	19950428		
US 1996-614115	A	19960312		
WO 1996-EP1755	W	19960426		
WO 1996-US5651	W	19960426		
US 1998-945574	A1	19980227		
AB	Aq. laundry solns. contg. a single cellulase with a ratio of tensile strength loss (TSL) to antipiling properties (AP) <1 are prepd. Cellulase BCE 103 and cellulases BCE 113 are produced by Bacillus strain CBS 670.93 and CBS 669.93, resp., and used for the prepn. of the aq. laundry solns. The performance of the detergent contg. the cellulases were obsd. using the parameters such as anti-greying effects, softening effects, anti-wrinkling effects, etc.			
ST	Bacillus cellulase laundry detergent			
IT	Detergents (laundry; detergents comprising cellulases of Bacillus with improved performance)			
IT	Detergents (liq.; detergents comprising cellulases of Bacillus with improved performance)			
IT	Bacillus (bacterium genus) (strain CBS 669.93 and CBS 670.93; detergents comprising cellulases of Bacillus with improved performance)			
IT	9012-54-8P, Cellulase RL: BAC (Biological activity or effector, except adverse); BPN (Biosynthetic preparation); BSU (Biological study, unclassified); NUU (Other use, unclassified); BIOL (Biological study); PREP (Preparation); USES (Uses) (BCE 103; BCE 113; detergents comprising cellulases of Bacillus with improved performance)			
IT	183511-10-6 RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); NUU (Other use, unclassified); PRP (Properties); BIOL (Biological study); USES (Uses) (BCE 103; amino acid sequence; detergents comprising cellulases of Bacillus with improved performance)			
IT	184491-52-9 RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); NUU (Other use, unclassified); PRP (Properties); BIOL (Biological study); USES (Uses) (BCE 113; amino acid sequence; detergents comprising cellulases of Bacillus with improved performance)			
IT	183511-09-3 184491-51-8 RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); NUU (Other use, unclassified); PRP (Properties); BIOL (Biological study); USES (Uses) (nucleotide sequence; detergents comprising cellulases of Bacillus with improved performance)			

AN 1996:708286 HCAPLUS
 DN 125:321659
 TI Bacillus cellulase and its applications for **detergents** and
textile treatment
 IN Van Beckhoven, Rudolf Franciscu; Lenting, Hermanus Bernardus M.; Maurer,
 Karl-Heinz; Van Solingen, Pieter; Weiss, Albrecht
 PA **Genencor International, Inc., USA**
 SO Eur. Pat. Appl., 17 pp.
 CODEN: EPXXDW
 DT Patent
 LA English
 IC ICM C12N015-56
 ICS C12N015-63; C12N009-42; C12N001-21; C11D003-386
 CC 7-2 (**Enzymes**)
 Section cross-reference(s): 3, 40, 46
 FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 739982	A1	19961030	EP 1995-201115	19950428 <--
	R: NL				
	CA 2219245	AA	19961031	CA 1996-2219245	19960426
	CA 2222141	AA	19961031	CA 1996-2222141	19960426
	WO 9634092	A2	19961031	WO 1996-EP1755	19960426
	WO 9634092	A3	19970227		
	W: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI				
	RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN				
	WO 9634108	A2	19961031	WO 1996-US5652	19960426
	WO 9634108	A3	19961205		
	W: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI				
	RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN				
	ZA 9603347	A	19961104	ZA 1996-3347	19960426
	ZA 9603349	A	19961104	ZA 1996-3349	19960426
	AU 9655692	A1	19961118	AU 1996-55692	19960426
	AU 703309	B2	19990325		
	AU 9656927	A1	19961118		
	AU 710006	B2	19990909	AU 1996-56927	19960426
	EP 827534	A2	19980311	EP 1996-914993	19960426
	R: AT, BE, CH, DE, DK, ES, FR, GB, IT, LI, NL				
	EP 828840	A2	19980318	EP 1996-913073	19960426
	EP 828840	B1	20010110		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, NL, SE, PT, IE, FI				
	CN 1185179	A	19980617	CN 1996-193560	19960426
	CN 1185807	A	19980624	CN 1996-194290	19960426
	BR 9608071	A	19990126	BR 1996-8071	19960426
	JP 11503902	T2	19990406	JP 1996-522486	19960426
	JP 11504062	T2	19990406	JP 1996-532184	19960426
	AT 198626	E	20010115	AT 1996-913073	19960426
	ES 2154816	T3	20010416	ES 1996-913073	19960426
	EP 1275712	A2	20030115	EP 2002-17961	19960426
	R: AT, BE, CH, DE, DK, ES, FR, GB, IT, LI, NL				
	US 5856165	A	19990105	US 1997-727548	19970604
	US 6313081	B1	20011106	US 1998-945574	19980227
	US 2002128166	A1	20020912	US 2001-863547	20010523
PRAI	EP 1995-201115	A	19950428		
	US 1996-614115	A	19960312		

EP 1996-914993 A3 19960426
 WO 1996-EP1755 W 19960426
 WO 1996-US5652 W 19960426
 US 1998-945574 A1 19980227

- AB A **enzyme** having cellulase activity was detected in Bacillus strain CBS 670.93. Cloning with the CBS 670.93 strain as donor resulted in isolation of and Escherichia coli clone (BCE103) which produced a cellulase. The nucleotide sequence of the gene coding for the cellulase indicated a 467-amino acid precursor protein contg. a 26-amino acid signal moiety. The single cellulase is characterized in that it is able to provide both antiredeposition and depilling effects when applied in laundry **washing**. The **enzyme** is suited for use in **detergent** and **textile**-treatment (e.g., stonewash or biopolish process) applications.
- ST cellulase Bacillus **detergent textile**; sequence
 cellulase gene Bacillus
- IT Bacillus
 Bacteria
Detergents
 Fungi
 Microorganism
 Molecular cloning
Textiles
 (Bacillus cellulase and its applications for **detergents** and **textile** treatment)
- IT Plasmid and Episome
 (expression vector; Bacillus cellulase and its applications for **detergents** and **textile** treatment)
- IT Protein sequences
 (of cellulase from Bacillus DBS 670.93)
- IT Deoxyribonucleic acid sequences
 (of cellulase gene from Bacillus DBS 670.93)
- IT 9012-54-8P, Cellulase
 RL: BPN (Biosynthetic preparation); NUU (Other use, unclassified); PRP (Properties); BIOL (Biological study); PREP (Preparation); USES (Uses)
 (Bacillus cellulase and its applications for **detergents** and **textile** treatment)
- IT 183511-10-6P
 RL: BPN (Biosynthetic preparation); NUU (Other use, unclassified); PRP (Properties); BIOL (Biological study); PREP (Preparation); USES (Uses)
 (amino acid sequence; Bacillus cellulase and its applications for **detergents** and **textile** treatment)
- IT 183511-09-3P
 RL: BPN (Biosynthetic preparation); PRP (Properties); BIOL (Biological study); PREP (Preparation)
 (nucleotide sequence; Bacillus cellulase and its applications for **detergents** and **textile** treatment)
- L70 ANSWER 10 OF 12 HCAPLUS COPYRIGHT 2003 ACS
 AN 1995:828343 HCAPLUS
 DN 123:250114
 TI Subtilisin variants and their preparation and characterization
 IN Graycar, Thomas P.; Bott, Richard R.; Wilson, Lori J.
 PA **Genencor International. Inc., USA**
 SO PCT Int. Appl., 73 pp.
 CODEN: PIXXD2
 DT Patent
 LA English
 IC ICM C12N015-57
 ICS C12N009-54; C12N001-21
 CC 7-5 (Enzymes)
 Section cross-reference(s): 46
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
PI	WO 9510615	A1	19950420	WO 1994-US11562	19941013	<--
	W: AM, AT, AU, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, ES, FI, GB, GE, HU, JP, KE, KG, KP, KR, KZ, LK, LT, LU, LV, MD, MG, MN, MW, NL, NO, NZ, PL, PT, RO, RU, SD, SE, SI, SK, TJ, TT, UA, UZ, VN					
	RW: KE, MW, SD, SZ, AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG					
	CA 2173973	AA	19950420	CA 1994-2173973	19941013	
	AU 9480157	A1	19950504	AU 1994-80157	19941013	
	AU 700373	B2	19990107			
	EP 723590	A1	19960731	EP 1994-931345	19941013	
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE					
	CN 1133068	A	19961009	CN 1994-193785	19941013	
	CN 1056649	B	20000920			
	JP 09504170	T2	19970428	JP 1994-512013	19941013	
	BR 9407825	A	19970506	BR 1994-7825	19941013	
	RU 2136756	C1	19990910	RU 1996-109372	19941013	
	PL 178478	B1	20000531	PL 1994-313942	19941013	
	CZ 289323	B6	20020116	CZ 1996-1065	19941013	
	ZA 9408086	A	19950607	ZA 1994-8086	19941014	
	TW 448230	B	20010801	TW 1995-84100420	19950118	
	NO 9601468	A	19960412	NO 1996-1468	19960412	
	FI 9601631	A	19960415	FI 1996-1631	19960412	
PRAI	US 1993-137240	A	19931014			
	WO 1994-US11562	W	19941013			

AB Prepn. of variants of a carbonyl hydrolase such as subtilisin of *Bacillus* by site-specific mutation of a DNA sequence encoding the natural or recombinant subtilisin is described. The variants exhibits altered properties such as improved thermostability and proteolytic activity. The substituted amino acid residues correspond to positions +76 in combination with one or more of the following residues +99, +101, +103, +104, +107, +123, +27, +105, +109, +126, +128, +135, +156, +166, +195, +197, +204, +206, +210, +216, +217, +218, +222, +260, +265 and/or +274 in *Bacillus amyloliquefaciens* subtilisin. Prepn. and characterization of subtilisin variants of *Bacillus lentus* are demonstrated. The variants can be used in the prepn. of laundry detergent.

ST *Bacillus lentus* subtilisin variant prepn; detergent subtilisin variant

IT Protein sequences
(of subtilisin variants of *Bacillus lentus*)

IT Detergents
(laundry, subtilisin variants of *Bacillus lentus* with improved thermostability and proteolytic activity for)

IT	168457-41-8P	168457-42-9P	168457-43-0P	168457-44-1P	168457-45-2P
	168457-46-3P	168457-47-4P	168457-48-5P	168457-49-6P	168457-50-9P
	168457-51-0P	168457-52-1P	168457-53-2P	168457-54-3P	168457-55-4P
	168457-56-5P	168457-57-6P	168457-58-7P	168457-59-8P	168457-60-1P
	168457-61-2P	168457-62-3P	168457-63-4P	168457-64-5P	168457-65-6P
	168457-66-7P	168457-67-8P	168457-68-9P	168457-69-0P	168457-70-3P
	168457-71-4P	168457-72-5P	168457-73-6P	168457-74-7P	168457-75-8P
	168457-76-9P	168457-77-0P	168457-78-1P	168457-79-2P	168457-80-5P
	168457-81-6P	168457-82-7P	168457-83-8P	168457-84-9P	168457-85-0P
	168457-86-1P	168457-87-2P	168457-88-3P	168457-89-4P	168457-90-7P
	168457-91-8P	168457-92-9P	168457-93-0P	168457-94-1P	168457-95-2P
	168457-96-3P	168457-97-4P	168457-98-5P	168457-99-6P	168458-00-2P
	168458-01-3P	168458-02-4P	168458-03-5P	168458-04-6P	168458-05-7P
	168458-06-8P	168458-07-9P	168458-08-0P	168458-09-1P	168458-10-4P
	168458-11-5P	168458-12-6P	168458-13-7P	168458-14-8P	168458-15-9P
	168458-16-0P	168458-17-1P	168612-94-0P	169150-80-5P	169150-81-6P

RL: BPN (Biosynthetic preparation); NUU (Other use, unclassified); BIOL (Biological study); PREP (Preparation); USES (Uses)
(prepn. and characterization of)

IT 125957-85-9P, Subtilisin (Bacillus lentus clone pSX86)
 RL: BPN (Biosynthetic preparation); NUU (Other use, unclassified); BIOL
 (Biological study); PREP (Preparation); USES (Uses)
 (prepn. and characterization of subtilisin variants of)

L70 ANSWER 11 OF 12 HCAPLUS COPYRIGHT 2003 ACS

AN 1993:583395 HCAPLUS

DN 119:183395

TI Detergent enzymes derived from fungi

IN Outtrup, Helle; Aaslyng, Dorrit Anita; Dambmann, Claus; Patkar, Shamkant
 Anant

PA Novo Nordisk A/S, Den.

SO PCT Int. Appl., 15 pp.

CODEN: PIXXD2

DT Patent

LA English

IC ICM C11D003-386

ICS C12N009-58

CC 46-5 (Surface Active Agents and Detergents)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9305134	A1	19930318	WO 1992-DK273	19920911 <--
	W: FI, JP, KR, US				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, SE				
	EP 603328	A1	19940629	EP 1992-920666	19920911
	EP 603328	B1	19990506		
	R: AT, BE, DE, DK, ES, FR, GB, IT, NL				
	JP 07502288	T2	19950309	JP 1992-504850	19920911
	AT 179752	E	19990515	AT 1992-920666	19920911
	ES 2133328	T3	19990916	ES 1992-920666	19920911
	JP 3295424	B2	20020624	JP 1993-504850	19920911
	US 5468416	A	19951121	US 1994-193112	19940208
	FI 9401147	A	19940310	FI 1994-1147	19940310
PRAI	WO 1991-DK262	A	19910911		
	WO 1992-DK273	W	19920911		
AB	Proteases derived from fungi of the genus Verticillium are useful in detergent compns. for removing stains during laundry.				
ST	protease Verticillium laundry detergent				
IT	Detergents				
	(laundry, proteases from Verticillium fungi for)				
IT	9001-92-7, Proteinase				
	RL: USES (Uses)				
	(of Verticillium, laundry detergents contg.)				

L70 ANSWER 12 OF 12 HCAPLUS COPYRIGHT 2003 ACS

AN 1990:201169 HCAPLUS

DN 112:201169

TI Amphoteric surfactants for enzyme stabilization in liquid detergents

IN Aaslyng, Dorrit; Palicka, Jadwiga

PA Novo-Nordisk A/S, Den.; Berol Nobel Nacka AB

SO Eur. Pat. Appl., 7 pp.

CODEN: EPXXDW

DT Patent

LA English

IC ICM C11D003-386

ICS C11D001-90

CC 46-5 (Surface Active Agents and Detergents)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 352244	A2	19900124	EP 1989-850212	19890622 <--
	EP 352244	A3	19901227		

R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, LU, NL, SE
 JP 02041398 A2 19900209 JP 1988-294799 19881124
 US 5156761 A 19921020 US 1991-666554 19910307
 PRAI DK 1988-4039 19880720
 DK 1988-5254 19880921
 DK 1988-5996 19881010
 US 1989-354538 19890519
 OS MARPAT 112:201169
 AB Amphoteric surfactants R[NA(CHR1)x]yNAQ (R = C7-22 hydrocarbyl; R1 = H, C1-6 alkyl; x = 2-3; y = 1-4; Q = R2CO2M; R2 = C1-6 alkylene; M = H, alkali or alk. earth metal, ammonium, etc.; A = H, Q) are used in liq. detergent compns. (e.g., for laundering) to improve the stability of relatively unstable enzymes and provide good detergency. A detergent (adjusted to pH 9.0) contg. water 54.9, triethanolamine 10, C12-14 fatty acids 7, EtOH 5, propylene glycol 5, Dequest 2006 (60%) 2, CaCl2 0.1, nonionic surfactant 10, Ampholak 7TX (I; amphoteric surfactant) 6, and Savinase 8.0L 1% retained 91% of its enzyme activity during 2 wk at 37.degree., vs. 60-71 with anionic surfactants instead of I.
 ST enzyme stabilizer liq detergent; protease stabilizer liq detergent; amphoteric stabilizer enzyme detergent; laundering detergent enzyme stabilizer
 IT Amphoteric substances
 (surfactants, enzyme-stabilizing, liq. detergents contg.)
 IT Detergents
 (laundry, liq., amphoteric surfactants for, enzyme-stabilizing)
 IT 9000-92-4, Amylase 9001-62-1 9001-92-7, Proteinase 9012-54-8, Cellulase 9014-01-1, Subtilisin
 RL: USES (Uses)
 (stabilizers for, in liq. detergents, amphoteric surfactants as)
 IT 109488-47-3, Ampholak 7TX
 RL: TEM (Technical or engineered material use); USES (Uses)
 (surfactants, enzyme-stabilizing, liq. detergents contg.)

=> fil wpix

FILE 'WPIX' ENTERED AT 19:32:05 ON 25 FEB 2003
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FILE LAST UPDATED: 24 FEB 2003 <20030224/UP>
 MOST RECENT DERWENT UPDATE: 200313 <200313/DW>
 DERWENT WORLD PATENTS INDEX SUBSCRIBER FILE, COVERS 1963 TO DATE

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GUIDES, PLEASE VISIT:
http://www.derwent.com/userguides/dwpi_guide.html <<<

=> d all abeq tech abex tot

L90 ANSWER 1 OF 2 WPIX (C) 2003 THOMSON DERWENT

AN 1999-430249 [36] WPIX

DNC C1999-126793

TI A method for assaying for a preferred enzyme in the production of specific detergents.

DC D16 D25

IN COLLIER, K D; KELLIS, J T; NADHERNY, J; NAKI, D P; SCHELLENBERGER, V

PA (GEMV) GENENCOR INT INC

CYC 82

PI WO 9934011 A2 19990708 (199936)* EN 13p C12Q001-00 <--
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL
OA PT SD SE SZ UG ZW
W: AL AM AT AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GE GH
GM HR HU ID IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK
MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG US
UZ VN YU ZW

AU 9922070 A 19990719 (199951)

EP 1042501 A2 20001011 (200052) EN C12Q001-00 <--

R: BE DE DK ES FI FR GB IT NL C12Q001-00 <--

JP 2002500019 W 20020108 (200206) 22p C12Q001-25 <--

ADT WO 9934011 A2 WO 1998-US27629 19981223; AU 9922070 A AU 1999-22070
19981223; EP 1042501 A2 EP 1998-966092 19981223, WO 1998-US27629 19981223;
JP 2002500019 W WO 1998-US27629 19981223, JP 2000-526665 19981223

FDT AU 9922070 A Based on WO 9934011; EP 1042501 A2 Based on WO 9934011; JP
2002500019 W Based on WO 9934011

PRAI US 1997-68796P 19971224

IC ICM C12Q001-00; C12Q001-25

ICA C11D003-386

AB WO 9934011 A UPAB: 19990908

NOVELTY - A method of assaying for a preferred enzyme comprises:

(a) providing a swatch of material comprising a piece of material and a stain;

(b) fixing the stain to the material;

(c) applying an enzyme to the swatch; and

(d) incubating the swatch and enzyme.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for a method of assaying for a preferred detergent composition comprising:

(a) providing a swatch of material comprising a piece of material and a stain;

(b) fixing the stain to the material;

(c) applying a detergent composition to the swatch; and

(d) incubating the swatch and detergent composition.

USE - The methods are used to determine the catalytic efficiency of an enzyme.

Dwg.0/1

FS CPI

FA AB

MC CPI: D05-A02; D11-B02

TECH UPTX: 19990908

TECHNOLOGY FOCUS - BIOTECHNOLOGY - Preferred Methods: the method further comprises measuring the degree of removal of the stain from the material. The enzyme is applied to the swatch in combination with a detergent ingredient. The method further comprises agitating the swatch and enzyme during incubation.

Preferred Materials: The enzyme is selected from protease, a cellulose, an amylase, a lactase and a lipase. The material is selected from fabric,

plastic, glass or ceramic. The stain is selected from blood, milk, ink, grass, spinach, gravy, chocolate, egg, cheese, clay, pigment and/or oil.

ABEX

EXAMPLE - No relevant example given.

L90 ANSWER 2 OF 2 WPIX (C) 2003 THOMSON DERWENT
 AN 1997-192920 [17] WPIX
 DNC C1997-061747
 TI Selection of enzymes for use in detergents - using a phage display system in a detergent compsn. which has a negative impact on enzyme activity.
 DC D16 D25
 IN BJORNVAD, M E; DIDERICHSEN, B; MARKVARSEN, P; MIKKELSEN, F
 PA (NOVO) NOVO-NORDISK AS; (BJOR-I) BJORNVAD M E; (DIDE-I) DIDERICHSEN B; (MARK-I) MARKVARSEN P; (MIKK-I) MIKKELSEN F; (NOVO) NOVO NORDISK AS; (NOVO) NOVOZYMES AS
 CYC 74
 PI WO 9709446 A1 19970313 (199717)* EN 24p C12Q001-25 <--
 RW: AT BE CH DE DK EA ES FI FR GB GR IE IT KE LS LU MC MW NL OA PT SD SE SZ UG
 W: AL AM AT AU AZ BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GE HU IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK TJ TM TR TT UA UG US UZ VN
 AU 9667854 A 19970327 (199729) C12Q001-25 <--
 EP 854933 A1 19980729 (199834) EN C12Q001-25 <--
 R: AT BE CH DE DK ES FI FR GB GR IE IT LI NL PT SE
 CN 1196094 A 19981014 (199909) C12Q001-25 <--
 JP 11511977 W 19991019 (200001) 27p C12N015-09
 US 6194183 B1 20010227 (200114) C12N009-99
 US 2002058246 A1 20020516 (200237) C12Q001-70 <--
 US 6506566 B2 20030114 (200313) C12Q001-68 <--
 ADT WO 9709446 A1 WO 1996-DK368 19960904; AU 9667854 A AU 1996-67854 19960904; EP 854933 A1 EP 1996-928355 19960904; WO 1996-DK368 19960904; CN 1196094 A CN 1996-196801 19960904; JP 11511977 W WO 1996-DK368 19960904, JP 1997-510783 19960904; US 6194183 B1 Cont of WO 1996-DK368 19960904, US 1998-17612 19980202; US 2002058246 A1 Cont of WO 1996-DK368 19960904, US 2000-739936 20001218; US 6506566 B2 Cont of WO 1996-DK368 19960904, Cont of US 1998-17612 19980202, US 2000-739936 20001218
 FDT AU 9667854 A Based on WO 9709446; EP 854933 A1 Based on WO 9709446; JP 11511977 W Based on WO 9709446; US 6506566 B2 Cont of US 6194183
 PRAI DK 1995-988 19950907
 REP 2.Jnl.Ref; WO 9522615
 IC ICM C12N009-99; C12N015-09; C12Q001-25; C12Q001-68; C12Q001-70
 ICS C11D003-386; C12N007-02; C12N009-00; C12N009-20; C12N009-50; C12N011-16; C12Q001-02; C12Q001-37; C12Q001-44; G01N033-53; G01N033-573
 ICA C12N001-21
 ICI C12N001-21, C12R001:19
 AB WO 9709446 A UPAB: 19970424
 A new method of selecting enzymes or especially enzyme variants suitable for use in detergents is claimed, where the enzyme variants to be selected are in a mixture of enzyme variants which are each displayed on the surface of cells or phage particles, comprises: (a) introducing the mixture into a detergent composition in fluid form under conditions (e.g. high or low temperatures) that will inactivate, or have a negative impact on the activity of, most of the enzyme variants; (ii) reacting the mixture with a catcher molecule that will bind specifically only to enzyme variants that exhibit the property sought for, to form a complex between the cell or phage displayed enzyme variant and the catcher; (c) separating the complex from the remaining parts of the mixture; (d) dissociating the complex to isolate such cell(s) or phage(s) that displayed the enzyme variant; (e) introducing the phage into a host where it will multiply, or cultivating the cell under conditions conducive to its multiplication;

and (f) isolating a DNA molecule coding for the enzyme variant from the genome of the cell or phage. Also claimed are: (1) an enzyme selected using the above method; and (2) a detergent composition comprising an enzyme selected using the above method.

USE - The methods can be used for selecting variants of enzymes having bleaching properties such as proteases, cellulases, amylases, lyases, xylanases, pectinases, polygalacturonases, oxidases, laccases, oxidoreductases, transglutaminases, galactosidases, phytases or peroxidases for use in detergents.

Dwg.0/1

FS CPI

FA AB

MC CPI: D05-H09; D11-A; D11-B01A; D11-B02

=> d his

(FILE 'HOME' ENTERED AT 18:20:27 ON 25 FEB 2003)
SET COST OFF

FILE 'REGISTRY' ENTERED AT 18:20:34 ON 25 FEB 2003
E GLUTARALDEHYDE/CN

L1 1 S E3
SEL CHEM

FILE 'HCAPLUS' ENTERED AT 18:21:05 ON 25 FEB 2003

L2 18241 S E1-E42
L3 7978 S L1
L4 644 S PENTANEDIAL
L5 18241 S L2,L3,L4
L6 345 S L5 AND (TEXTIL? OR CLOTH?)/SC,SX,CW,BI
L7 154 S L5 AND FABRIC/SC,SX,CW,BI
L8 977 S L5 AND (FIBRE OR FIBER)/SC,SX,CW,BI
L9 1168 S L6-L8
L10 124 S L9 AND (STAIN? OR DESTAIN?)
L11 13 S L10 AND (TANNING OR TANNED OR LEATHER OR COTTON OR CARPET OR
SEL DN AN 2 3 5 7 8 11 12
L12 7 S L11 AND E43-E63
L13 2 S L9 AND (ANTISTAIN? OR ANTI STAIN?)
L14 1 S L13 AND CARPET
L15 7 S L12,L14
L16 43 S L6 AND ENZYM?/SC,SX,CW,BI
L17 41 S L16 NOT L10-L15
SEL DN AN 23 25 28
L18 3 S E64-E72
L19 10 S L15,L18
L20 10 S L19 AND (FIX? OR IMMOBIL? OR ?STAIN?)
L21 5320 S L5 AND ENZYM?/SC,SX,CW,BI
L22 563 S L21 AND (WASH? OR CLEAN? OR DETERGENT? OR SURFACE ACTIVE OR S
L23 39 S L22 AND ?STAIN?
SEL DN AN 10
L24 1 S E73-E75
L25 11 S L20,L24
E GENENCOR/PA,CS
L26 515 S E3-E78
E SCHELLENBERGER V/AU
L27 72 S E3,E4
E NAKI D/AU
L28 11 S E3-E5
E COLLIER K/AU
L29 39 S E3-E7
E KELLIS J/AU
L30 43 S E4-E8

L31 E NADHERNY J/AU
 L32 8 S E4
 L33 0 S L5 AND L27-L31
 L34 0 S L5 AND L26
 L35 40 S L26 AND L27-L31
 L36 10 S L27 AND L28-L31
 L37 9 S L29 AND L30,L31
 L38 8 S L30 AND L31
 11 S L35-L37
 E TEXTILES/CT
 E E3+ALL
 L39 60612 S E2,E1+NT
 L40 275692 S TEXTIL?/SC,SX
 L41 2800 S L39,L40 AND ENZYM?/SC,SX,CW,BI
 L42 953 S L41 AND (DETERGENT? OR SURFACE ACTIVE OR SOAP? OR LAUNDER? OR
 L43 61 S L26-L38 AND L42
 L44 30 S L43 NOT 3/SC,SX
 SEL DN AN 8 14
 L45 2 S L44 AND E1-E6
 L46 96 S L42 AND (STAIN? OR DESTAIN? OR ANTISTAIN?)
 L47 91 S L46 NOT L10-L20,L23-L25,L44
 SEL DN AN 27 29
 L48 2 S E7-E12
 L49 15 S L45,L48,L25
 L50 20 S ?ASSAY? AND L42
 L51 80 S L41 AND ?ASSAY?
 L52 10 S L51 AND ?STAIN?
 L53 40690 S (FABRIC OR MATERIAL OR PLASTIC OR GLASS OR CERAMIC OR CLOTH O
 L54 1622 S L53 AND STAIN?
 L55 190 S L54 AND FIX?
 L56 26 S L55 AND ?ASSAY?
 L57 918 S L53 AND L5
 L58 52 S L57 AND L54
 L59 57 S L57 AND ?STAIN?
 L60 5 S L58,L59 AND ?ASSAY?
 L61 15 S L49 AND L2-L60
 L62 15 S L61 AND (?STAIN? OR SPOT? OR FIX? OR ?ASSAY? OR ENZYM? OR CLE
 L63 9 S L61 AND (ENZYM? OR DETERGENT? OR SURFACE ACTIVE?)/SC,SX
 L64 15 S L62,L63
 L65 9 S L64 AND (PY<=1997 OR PRY<=1997 OR AY<=1997)
 L66 6 S L64 NOT L65

FILE 'REGISTRY' ENTERED AT 19:12:35 ON 25 FEB 2003

FILE 'HCAPLUS' ENTERED AT 19:12:51 ON 25 FEB 2003

FILE 'DPCI' ENTERED AT 19:13:59 ON 25 FEB 2003

L67 E WO9934011/PN
 1 S E3

FILE 'DPCI' ENTERED AT 19:14:13 ON 25 FEB 2003

FILE 'HCAPLUS' ENTERED AT 19:14:34 ON 25 FEB 2003

L68 12 S (EP352244 OR EP739982 OR US5612306 OR WO9305134 OR WO9510615
 L69 6 S L68 AND L2-L66
 L70 12 S L68,L69 NOT L64-L66

FILE 'HCAPLUS' ENTERED AT 19:16:12 ON 25 FEB 2003

FILE 'WPIX' ENTERED AT 19:17:07 ON 25 FEB 2003

L71 E WO9934011/PN
 L72 1 S E3
 2552 S L2/BIX OR L4/BIX

E GLUTARARALDEHYDE/DCN
E GLUTARALDEHYDE/DCN
E E3+ALL
L73 1143 S E2 OR 0927/DRN
L74 2978 S L72,L73
L75 43798 S C12Q001/IC,ICM,ICS
L76 33 S L75 AND C11D003-386/IC,ICM,ICS,ICA,ICI
L77 47 S D11-B02/MC AND L75
L78 56 S L76,L77
L79 1 S L74 AND L78
L80 172 S L74 AND L75
L81 140 S D16/DC AND L80
L82 1 S D25/DC AND L80
L83 52 S L80,L81 AND FIX?
L84 65 S L80,L81 AND IMMOBIL?
L85 107 S L83,L84
L86 12 S L85 AND ?STAIN?
L87 55 S L78 NOT L79,L86
SEL DN AN 18 41
L88 2 S L87 AND E1-E4
L89 2 S L71,L88
L90 2 S L89 AND L71-L89

FILE 'WPIX' ENTERED AT 19:32:05 ON 25 FEB 2003

=> fil hcaplus

FILE 'HCAPLUS' ENTERED AT 06:32:16 ON 26 FEB 2003

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FILE COVERS 1907 - 26 Feb 2003 VOL 138 ISS 9

FILE LAST UPDATED: 25 Feb 2003 (20030225/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d all tot 112

L12 ANSWER 1 OF 4 HCAPLUS COPYRIGHT 2003 ACS
AN 1995:794878 HCAPLUS
DN 123:172519
TI Enzyme compositions and methods for producing stonewashed look on indigo-dyed denim fabric
IN Clarkson, Kathleen A.; Lad, Pushkaraj J.; Mullins, Margaret M.; Simpson, Curran M.; Weiss, Geoffrey L.; Jacobs, Lindsay
PA Genencor International, Inc., USA
SO PCT Int. Appl., 39 pp.
CODEN: PIXXD2
DT Patent
LA English

IC ICM C11D011-00
ICS C11D003-386
CC 40-6 (Textiles and Fibers)
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9429426	A1	19941222	WO 1993-US11555	19931130 <--
	W: BR, CA, FI, JP, KR				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	BR 9307862	A	19960206	BR 1993-7862	19931130
	EP 702713	A1	19960327	EP 1994-903334	19931130
	EP 702713	B1	20020130		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE				
	JP 08511307	T2	19961126	JP 1993-512533	19931130
	AT 212659	E	20020215	AT 1994-903334	19931130
	ES 2170092	T3	20020801	ES 1994-903334	19931130
	US 6251144	B1	20010626	US 1995-386896	19950210
	FI 9505909	A	19951208	FI 1995-5909	19951208
PRAI	US 1992-897721	A	19920612		
	US 1993-75657	A	19930611		
	US 1993-159401	B3	19931130		
	WO 1993-US11555	W	19931130		
AB	During treatment of indigo-dyed denim fabric with a redepositing cellulase to produce a stonewashed look, a protease is added to reduce the amt. of backstaining and give more contrast between white and blue threads, i.e., a more complete stonewashed look.				
ST	cellulase protease stonewashing denim fabric; indigo dye removal				
IT	stonewashing cellulase; fading stonewashing denim cellulase protease				
	Decolorization				
	Fading				
	(addn. of protease for improved stonewashing effect in treatment of indigo-dyed denim fabric by cellulase)				
IT	Textiles				
	(denim, addn. of protease for improved stonewashing effect in treatment of indigo-dyed denim fabric by cellulase)				
IT	9012-54-8, Cellulase				
	RL: NUU (Other use, unclassified); USES (Uses)				
	(addn. of protease for improved stonewashing effect in treatment of indigo-dyed denim fabric by)				
IT	9001-92-7, Protease				
	RL: NUU (Other use, unclassified); USES (Uses)				
	(for improved stonewashing effect in treatment of indigo-dyed denim fabric by cellulase)				
L12	ANSWER 2 OF 4 HCAPLUS COPYRIGHT 2003 ACS				
AN	1995:678656 HCAPLUS				
DN	123:231169				
TI	Detergents for acid cellulase enzymes				
AU	Shook, Daniel B.				
CS	North Carolina State University, Raleigh, USA				
SO	Book of Papers - International Conference & Exhibition, AATCC (1994) 34-41				
	CODEN: BPIAEQ; ISSN: 0892-2713				
PB	American Association of Textile Chemists and Colorists				
DT	Journal				
LA	English				
CC	40-9 (Textiles and Fibers)				
	Section cross-reference(s): 46				
AB	The effect of various surfactants, most nonionic, on the activity of acid cellulase used in stonewashing of blue jeans is examd. through wash trials. The activity of the cellulase is evaluated by the appearance and phys. testing of the garment. The appearance is rated by abraded contrast and relative amt. of backstaining, or redeposition of dye, on the garment.				

The phys. testing includes fabric wt., tear strength, and spectrophotometric measurements of the garment. Seven sep. detergents of various classes, a blank with no detergent, and a desized only trial were used in washing under lab-scale conditions. The best all-around surfactant which did not inhibit cellulase activity, controlled redeposition well, and gave good contrast was of the nonionic linear ethoxylated alc. class.

- ST blue jean stonewashing cellulase; surfactant stonewashing blue jean
IT Surfactants
(anionic, surfactants for stonewashing of blue jeans with acid cellulase)
IT Wearing apparel
(blue jeans, surfactants for stonewashing of blue jeans with acid cellulase)
IT Alcohols, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(ethoxylated, surfactants for stonewashing of blue jeans with acid cellulase)
IT Surfactants
(nonionic, surfactants for stonewashing of blue jeans with acid cellulase)
IT 9012-54-8, Cellulase
RL: NUU (Other use, unclassified); USES (Uses)
(surfactants for stonewashing of blue jeans with acid cellulase)
IT 25322-68-3D, Polyethylene glycol, alkyl ethers
RL: TEM (Technical or engineered material use); USES (Uses)
(surfactants for stonewashing of blue jeans with acid cellulase)

L12 ANSWER 3 OF 4 HCAPLUS COPYRIGHT 2003 ACS
AN 1994:607550 HCAPLUS

DN 121:207550

TI Optimizing the use of cellulases for denim finishing
AU Klahorst, Suanne; Kumar, Akhil; Mullins, M. Margaret

CS Genencor Int., South San Francisco, CA, USA

SO Book of Papers - International Conference & Exhibition, AATCC (1992) 243-9

CODEN: BP1AEQ; ISSN: 0892-2713

DT Journal

LA English

CC 40-9 (Textiles and Fibers)

AB When using cellulase enzymes, the denim finisher's goal is to wash in the shortest time, at the lowest chem. cost, to produce garments of consistently high quality. The results are presented in panel score units. When panel score units are graphed vs. time and enzyme concns., results show that the liq. neutral cellulase requires double the time, or five times the enzyme quantity, to match the panel score units of the liq. acid cellulase conc. The reflectance values indicate more backstaining on the garments treated with the liq. acid cellulase, than with those treated with liq. neutral cellulase. Reflectance values also show that backstaining from treatment with acid cellulase is more dependent on washing time than on enzyme concn. The type of enzyme used is more closely related to backstaining than the pH of the wash, although pH has an indirect effect since it detcs. enzyme activity. To reduce time and control backstaining, 20-45 min wash times are preferable when using acid cellulase. Fashion looks that require over 60 min get good results from neutral cellulase. In general, the amt. of enzyme used should be increased as the wash time is decreased.

ST acid cellulase denim textile finishing; neutral cellulase denim textile finishing; backstaining denim textile finishing cellulase

IT Textiles
(denim, optimizing use of acid and neutral cellulases for denim finishing)

IT 9012-54-8, Cellulase

RL: NUU (Other use, unclassified); USES (Uses)
(optimizing use of acid and neutral cellulases for denim finishing)

- L12 ANSWER 4 OF 4 HCAPLUS COPYRIGHT 2003 ACS
AN 1989:492641 HCAPLUS
DN 111:92641
TI Desorption of *Trichoderma reesei* cellulase from cellulose by a range of desorbents
AU Otter, D. E.; Munro, P. A.; Scott, G. K.; Geddes, R.
CS Dep. Chem. Mater. Eng., Univ. Auckland, Auckland, N. Z.
SO Biotechnology and Bioengineering (1989), 34(3), 291-8
CODEN: BIBIAU; ISSN: 0006-3592
DT Journal
LA English
CC 7-2 (Enzymes)
AB The desorption of *T. reesei* cellulase from Avicel by a wide range of desorbents was measured. Emphasis was placed on desorption at alk. pH. A max. desorption of 65-68% cellulase activity was achieved by contact with NaOH, pH 10.0, at 40.degree. for 5 min in the presence of 0.005% Triton X-100 or Tween 80. The design of a suitable desorption process using these conditions was discussed. Glycerol was also effective as a desorbent either alone or in combination with alkali and detergent. However, relatively high concns. of glycerol were needed and the max. desorption achieved, 68%, was not significantly greater than that with only alkali and detergent.
ST cellulase *Trichoderma* desorption cellulose
IT *Trichoderma reesei*
(cellulase of, desorption of, from cellulose)
IT Thiols, properties
RL: PRP (Properties)
(desorption of cellulase of *Trichoderma reesei* from cellulose response to)
IT Desorption
(of cellulase of *Trichoderma reesei* from cellulose at alk. pH)
IT Detergents
(nonionic, desorption of cellulase of *Trichoderma reesei* from cellulose response to)
IT Alcohols, properties
RL: PRP (Properties)
(polyhydric, desorption of cellulase of *Trichoderma reesei* from cellulose response to)
IT 9005-65-6, Tween 80
RL: BIOL (Biological study)
(desorption of cellulase of *Trichoderma reesei* from cellulose response to)
IT 52-90-4, Cysteine, properties 56-81-5, Glycerol, properties 57-13-6, Urea, properties 57-50-1, Sucrose, properties 60-00-4, EDTA, properties 60-24-2, .beta.-Mercaptoethanol 67-63-0, Isopropanol, properties 67-64-1, Acetone, properties 70-18-8, Glutathione, properties 83-44-3 107-21-1, Ethylene glycol, properties 151-21-3, SDS, properties 151-50-8, Potassium cyanide 3483-12-3, Dithiothreitol 7785-87-7, Manganese sulfate 7786-30-3, Magnesium chloride, properties 9002-93-1, Triton X-100 10043-52-4, Calcium chloride, properties 25322-68-3, Polyethylene glycol 29836-26-8, Octyl glucoside
RL: PRP (Properties)
(desorption of cellulase of *Trichoderma reesei* from cellulose response to)
IT 9004-34-6, Avicel, properties
RL: PRP (Properties)
(desorption of cellulase of *Trichoderma reesei* from, at alk. pH)
IT 9012-54-8, Cellulase
RL: PEP (Physical, engineering or chemical process); PROC (Process)

(desorption of, of *Trichoderma reesei*, from cellulose at alk. pH)

=> d all tot

- L42 ANSWER 1 OF 12 HCAPLUS COPYRIGHT 2003 ACS
AN 1994:109365 HCAPLUS
DN 120:109365
TI Thermal characteristics of unsaturated dicarboxylic acid durable press finishing systems
AU **Trask-Morrell, Brenda J.**; Choi, Hyung Min
CS South. Reg. Res. Cent., USDA, New Orleans, LA, 70179-0687, USA
SO Journal of Applied Polymer Science (1994), 51(5), 769-79
CODEN: JAPNAB; ISSN: 0021-8995
DT Journal
LA English
CC 40-5 (Textiles and Fibers)
Section cross-reference(s): 42
AB Thermoanal. (TA) studies including DSC and thermogravimetric (TG) analyses were carried out to measure characteristics of dried mixts. based on two unsatd. polycarboxylic acids. Model 9% treatment (pad) solns. of maleic (I) and/or itaconic (II) acid, with and without potassium peroxydisulfate (III) as the free-radical initiator, were prepd. with sodium hypophosphite (IV) as the catalyst and vacuum-oven dried. DSC thermograms varied with each component; even the presence of a small amt. of component III was evident. TG residue prodn. and max. rates of wt. loss were the most useful thermal parameters. Residue/rate factors, used previously as predictors, were calcd. Previous studies indicated that high residues and low rates were indicators of combinations of reactants that resulted in good durable-press treatments for fabrics. Residue/rate factors were used to rank the six mixts. that reflect actual fabric treatment combinations: I-IV, II-IV, I-II-IV, and those same three with the initiator present. Ranking indicated that the presence of the initiator significantly increased the residue/rate factor for II-III-IV and for I-II-III-IV. The presence of the initiator appears more beneficial to II than to I. The rankings by the TA predictor agreed with textile properties measuring appearance and strength.
ST polymaleic acid coating durable press; polyitaconic acid coating thermal property
IT Polymer degradation
(of poly(itaconic acid) or poly(maleic acid) coatings for fibers)
IT Coating materials
(poly(itaconic acid) or poly(maleic acid), for fibers, thermal properties of)
IT 7681-53-0, Sodium hypophosphite
RL: USES (Uses)
(catalysts , for polycondensation of itaconic acid or maleic acid, polymer thermal properties in relation to)
IT 25119-64-6, Poly(itaconic acid) 26099-09-2, Poly(maleic acid)
49720-88-9, Itaconic acid-maleic acid copolymer
RL: USES (Uses)
(coatings, for fibers, thermal properties of)

L42 ANSWER 2 OF 12 HCAPLUS COPYRIGHT 2003 ACS
AN 1993:126400 HCAPLUS
DN 118:126400
TI Nonformaldehyde polymerization-crosslinking treatment of cotton fabrics for improved strength retention
AU **Choi, Hyung Min**
CS Agric. Cent., Louisiana State Univ., Baton Rouge, LA, 70803, USA
SO Textile Research Journal (1992), 62(10), 614-18

CODEN: TRJOA9; ISSN: 0040-5175

- DT Journal
LA English
CC 40-9 (Textiles and Fibers)
AB A new concept in polycarboxylic crosslinking agents for cellulose is introduced using olefinically unsatd. dicarboxylic acids, maleic acid (I), and itaconic acid (II). In contrast to previous studies involving acids contg. ≥ 3 COOH groups per mol., the dicarboxylic monomers can be effective crosslinking agents for cellulose when they are applied in the presence of a free radical initiator and an esterification catalyst. The system of a 1:1 mol ratio of I and II substantially increases a smooth drying appearance while maintaining much improved strength retention of the treated fabric and without involving any formaldehyde. Striking effects appear in the increased Stoll flex abrasion resistance of the treated fabric. The evidence of cellulose crosslinks through esterification reactions of COOH groups in I and II and cellulose hydroxyl groups was confirmed by chem. analyses and FT-IR spectra.
- ST polymn crosslinking cotton strength retention; maleic crosslinking cotton strength retention; itaconic crosslinking cotton strength retention
- IT Crosslinking
(in cotton finishing, with unsatd. dicarboxylic acid mixts., for strength retention)
- IT Textile easy-care finishing
(durable-press, with unsatd. dicarboxylic acid mixts., for strength retention)
- IT 110-16-7, Maleic acid, uses
RL: USES (Uses)
(cotton fabric treatment with itaconic acid and, for permanent-press finishing with strength retention)
- IT 97-65-4, Itaconic acid, uses
RL: USES (Uses)
(cotton fabric treatment with maleic acid and, for permanent-press finishing with strength retention)
- L42 ANSWER 3 OF 12 HCAPLUS COPYRIGHT 2003 ACS
AN 1989:59416 HCAPLUS
DN 110:59416
TI Tetracarboxylic acids as formaldehyde-free durable press finishing agents. Part I. Catalyst, additive, and durability studies
AU Welch, Clark M.
CS ARS, USDA, New Orleans, LA, 70179, USA
SO **Textile Research Journal** (1988), 58(8), 480-6
CODEN: TRJOA9; ISSN: 0040-5175
- DT Journal
LA English
CC 40-9 (Textiles and Fibers)
AB Cotton fabrics treated with 1,2,3,4-butanetetracarboxylic acid (I) as a creaseproofing agent had good durability to laundering, high strength retention, and good durable-press ratings. Weak bases, including NaH_2PO_4 , were active catalysts for esterification of I with cotton cellulose. The amt. of I required was reduced by two-thirds by having citric or tartaric acid present as a coreactant additive. Cyclopentanetetracarboxylic acid as a creaseproofing agent had far poorer durability to home laundering than did I.
- ST cotton creaseproofing durability catalysis; butanetetracarboxylic acid cotton creaseproofing agent; cyclopentanetetracarboxylic acid cotton creaseproofing agent; sodium phosphate catalyst cotton creaseproofing; citric acid cotton creaseproofing; tartaric acid cotton creaseproofing; tetracarboxylic acid creaseproofing cotton
- IT Esterification catalysts
(for creaseproofing of cotton textiles with tetracarboxylic acids)
- IT Rubber, natural, uses and miscellaneous

- RL: USES (Uses)
 (polymers with acrylic polymers, fabric softeners, for cotton, butanetetracarboxylic acid creaseproofing agents in relation to)
- IT Acrylic polymers, uses and miscellaneous
 RL: USES (Uses)
 (polymers with natural rubber, fabric softeners, for cotton, butanetetracarboxylic acid creaseproofing agents in relation to)
- IT Textile easy-care finishing
 (creaseproofing, agents, butanetetracarboxylic acid and cyclopentanetetracarboxylic acid as, laundering durability of, catalysis in relation to)
- IT Siloxanes and Silicones, uses and miscellaneous
 RL: USES (Uses)
 (epoxy, fabric softener, Ucarsil TE 24, for cotton, butanetetracarboxylic acid and cyclopentanetetracarboxylic acid creaseproofing agents in relation to)
- IT Epoxy resins, uses and miscellaneous
 RL: USES (Uses)
 (siloxane-, fabric softener, Ucarsil TE 24, for cotton, butanetetracarboxylic acid and cyclopentanetetracarboxylic acid creaseproofing agents in relation to)
- IT Polyphosphoric acids
 RL: CAT (Catalyst use); USES (Uses)
 (sodium salts, catalysts, for creaseproofing of cotton fabrics with cyclopentanetetracarboxylic acid)
- IT 7733-02-0, Zinc sulfate
 RL: CAT (Catalyst use); USES (Uses)
 (catalysts, contg. monosodium phosphate, for creaseproofing of cotton fabrics with cyclopentanetetracarboxylic acid)
- IT 10043-01-3, Aluminum sulfate
 RL: CAT (Catalyst use); USES (Uses)
 (catalysts, contg. monosodium phosphate, for creaseproofing of cotton fabrics with cyclopentanetetracarboxylic acid and butanetetracarboxylic acid)
- IT 497-19-8, Disodium carbonate, uses and miscellaneous 868-18-8, Disodium tartrate 7558-79-4, Disodium phosphate 7722-76-1, Monoammonium phosphate
 RL: CAT (Catalyst use); USES (Uses)
 (catalysts, for creaseproofing of cotton fabrics with cyclopentanetetracarboxylic acid)
- IT 7558-80-7, Monosodium phosphate
 RL: CAT (Catalyst use); USES (Uses)
 (catalysts, for creaseproofing of cotton fabrics with cyclopentanetetracarboxylic acid and butanetetracarboxylic acid)
- IT 87-69-4, Tartaric acid, uses and miscellaneous
 RL: USES (Uses)
 (creaseproofing agent, contg. cyclopentanetetracarboxylic acid or butanetetracarboxylic acid, for cotton textiles, durability to laundering in relation to)
- IT 77-92-9, Citric acid, uses and miscellaneous
 RL: USES (Uses)
 (creaseproofing agent, contg. cyclopentanetetracarboxylic acid, for cotton textiles, durability to laundering in relation to)
- IT 1703-58-8, 1,2,3,4-Butanetetracarboxylic acid 3786-91-2
 RL: USES (Uses)
 (creaseproofing agent, for cotton textiles, durability to laundering in relation to)
- IT 118550-09-7, Protolube PE
 RL: USES (Uses)
 (fabric softener, for cotton, butanetetracarboxylic acid and cyclopentanetetracarboxylic acid creaseproofing agents in relation to)
- IT 118548-83-7, Elastoplast V 29
 RL: USES (Uses)

(fabric softener, for cotton, butanetetracarboxylic acid creaseproofing agents in relation to)

- L42 ANSWER 4 OF 12 HCAPLUS COPYRIGHT 2003 ACS
AN 1987:460562 HCAPLUS
DN 107:60562
TI Low, medium, and high temperature catalysts for formaldehyde-free durable press finishing by the glyoxal-glycol process
AU Welch, Clark M.; Peters, Julie G.
CS South. Reg. Res. Cent., ARS, New Orleans, LA, 70179, USA
SO Textile Research Journal (1987), 57(6), 351-6
CODEN: TRJOA9; ISSN: 0040-5175
DT Journal
LA English
CC 40-9 (Textiles and Fibers)
AB The Al₂(SO₄)₃ catalyst used in the mild cure glyoxal-glycol durable-press process can be made less sensitive to deactivation by small amts. of alkalis present in cotton fabrics by adding 0.1-0.2% H₃PO₄ to the aq. treating soln. and using increased concns. of Al₂(SO₄)₃ at cure temp. 120-125.degree.. The same measures apply to the prevention of catalyst deactivation by polyethylene (I) softeners which contain alkali metal ions as counterions for the carboxylate groups linked to the I chains. The use of I in place of reactive silicones avoids the undesirable water repellency imparted by silicones. Short cure times of 15-20 s can be used in the medium cure process that uses cure temp. 145-160.degree.. Using Al dihydroxyacetate to suppress fabric tendering and yellowing during cure is an essential feature of this process which uses 1,6-hexanediol (II) as the glycol and Al₂(SO₄)₃-tartaric acid as the catalyst, with H₃PO₄ optional as a catalyst activator. The high temp. process uses Al₂(OH)₅Cl.2.5H₂O as the catalyst, an .alpha.-hydroxy acid or H₃PO₄ as the activator, and II as the glycol. The fabric retains a high degree of whiteness when cured for 35 s at 170.degree..
ST durable press finishing cotton; glyoxal glycol finishing cotton
IT Crosslinking catalysts
(for cotton fabrics in durable-press finishing with glyoxal and glycols)
IT Textile easy-care finishing
(durable-press, of cotton fabrics, with glyoxal and glycols, catalysts for)
IT 1327-41-9 10043-01-3, Aluminum sulfate
RL: CAT (Catalyst use); USES (Uses)
(catalysts, in durable-press finishing of cotton textiles with glyoxal and glycols)
IT 111-46-6, Diethylene glycol, uses and miscellaneous 629-11-8, 1,6-Hexanediol
RL: USES (Uses)
(cotton textile durable-press finishing by glyoxal and, catalysts for)
IT 107-22-2, Glyoxal
RL: USES (Uses)
(cotton textile durable-press finishing by, catalysts for)
IT 50-21-5, Lactic acid, uses and miscellaneous 77-92-9, Citric acid, uses and miscellaneous 79-14-1, Glycolic acid, uses and miscellaneous 104-15-4, p-Toluenesulfonic acid, uses and miscellaneous 7360-44-3 7664-38-2, Phosphoric acid, uses and miscellaneous 7664-93-9, Sulfuric acid, uses and miscellaneous 9002-88-4, Polyethylene
RL: USES (Uses)
(in durable-press finishing of cotton textiles with glyoxal and glycols)

L42 ANSWER 5 OF 12 HCAPLUS COPYRIGHT 2003 ACS
AN 1984:53049 HCAPLUS

DN 100:53049
TI Finishing agents for cotton from acrylamide and dialdehydes
AU **Frick, J. G., Jr.; Harper, R. J., Jr.**
CS South. Reg. Res. Cent., New Orleans, LA, 70179, USA
SO **Textile Research Journal** (1983), 53(12),
758-62
CODEN: TRJOA9; ISSN: 0040-5175
DT Journal
LA English
CC 40-9 (Textiles)
AB Reaction products from acrylamide (I) and glyoxal (II) or glutaraldehyde were used as finishing agents to impart wrinkle resistance and durable-press properties to cotton. The effectiveness of the reaction products was less than that of conventional amide-HCHO agents but about equal to that of presently available HCHO-free agents. The finish from I and II had greater resistance to acid than the most common HCHO-free finish. The agents caused noticeable discoloration and lacked Cl resistance.
ST durable press finishing cotton; acrylamide finishing agent cotton; glyoxal finishing agent cotton; glutaraldehyde finishing agent cotton; dialdehyde finishing agent cotton
IT Creaseproofing
(of cotton textiles, with acrylamide reaction products with glyoxal or glutaraldehyde)
IT Textiles
(cotton, durable-press finishing of, with acrylamide reaction products with glyoxal or glutaraldehyde)
IT Creasing
(durable-press, of cotton textiles, with acrylamide reaction products with glyoxal or glutaraldehyde)
IT 79-06-1D, reaction products with glyoxal or glutaraldehyde 107-22-2D, reaction products with acrylamide 111-30-8D, reaction products with acrylamide
RL: USES (Uses)
(durable-press finishing agents, for cotton textiles)

L42 ANSWER 6 OF 12 HCAPLUS COPYRIGHT 2003 ACS
AN 1983:162335 HCAPLUS
DN 98:162335
TI Glyoxal as a formaldehyde-free durable press reagent for mild curing applications
AU **Welch, Clark M.**
CS South. Reg. Res. Cent., New Orleans, LA, 70179, USA
SO **Textile Research Journal** (1983), 53(3),
181-6
CODEN: TRJOA9; ISSN: 0040-5175
DT Journal
LA English
CC 40-9 (Textiles)
AB Aluminum sulfate and .alpha.-hydroxy acids were effective in catalyzing the crosslinking of cotton cellulose by glyoxal (I) [107-22-2] under mild curing conditions. The durable-press appearance ratings were increased by the presence of ethylene glycol [107-21-1] as a coreactive additive and a silanol-terminated silicone softener. Longer-chain glycols, which cannot form 1:1 cyclic adducts with I, increased the efficiency of crosslinking by I so that quite low curing temps. and catalyst concns. could be used. A preferential absorption and interaction of I with the cellulose may have occurred during the drying step to form complex cellulose hemiacetals which subsequently interacted with added glycols to give the final crosslink structures during heat curing. With diethylene glycol [111-46-6] as coreactant with I in a 1:1 mol ratio, curing at 115.degree. was effective in imparting a durable-press rating of 4.0 with 298.degree. conditioned wrinkle recovery and 46-48% breaking or tearing strength

- retention in cotton printcloth.
- ST durable press cotton glyoxal glycol; ethylene glycol glyoxal cotton finishing; aluminum sulfate catalyst cotton finishing; hydroxy acid catalyst cotton finishing
- IT Crosslinking catalysts
(aluminum sulfate-hydroxycarboxylic acids, for durable-press finishing of cotton textiles with glyoxal and glycols)
- IT Softening agents
(siloxanes, in durable-press finishing of cotton textiles by glyoxal and glycols)
- IT Siloxanes and Silicones, uses and miscellaneous
RL: USES (Uses)
(softening agents, in durable-press finishing of cotton textiles by glyoxal and glycols)
- IT Textiles
(cotton, durable-press finishing of, by glyoxal and glycols, catalysts for)
- IT Creasing
(durable-press, of cotton textiles, by glyoxal and glycols, in presence of aluminum sulfate and hydroxy acids as catalysts)
- IT 50-21-5, uses and miscellaneous 77-92-9, uses and miscellaneous
79-14-1, uses and miscellaneous 87-69-4, uses and miscellaneous
110-15-6, uses and miscellaneous 6915-15-7 51365-15-2
RL: CAT (Catalyst use); USES (Uses)
(catalysts, contg. aluminum sulfate, for durable-press finishing of cotton textiles by glyoxal and glycols)
- IT 10043-01-3
RL: CAT (Catalyst use); USES (Uses)
(catalysts, contg. hydroxycarboxylic acids, for durable-press finishing of cotton textiles with glyoxal and glycols)
- IT 107-22-2
RL: USES (Uses)
(durable-press finishing by glycols and, of cotton textiles, catalysts for)
- IT 107-21-1, uses and miscellaneous 110-63-4, uses and miscellaneous
111-46-6, uses and miscellaneous 112-27-6 504-63-2
RL: USES (Uses)
(durable-press finishing by glyoxal and, of cotton textiles, catalysts for)
- L42 ANSWER 7 OF 12 HCAPLUS COPYRIGHT 2003 ACS
- AN 1982:164036 HCAPLUS
- DN 96:164036
- TI Glyoxal as a nonnitrogenous formaldehyde-free durable-press reagent for cotton
- AU Welch, Clark M.; Danna, G. Forthright
- CS South. Reg. Res. Cent., New Orleans, LA, 70179, USA
- SO Textile Research Journal (1982), 52(2), 149-57
CODEN: TRJOA9; ISSN: 0040-5175
- DT Journal
- LA English
- CC 40-9 (Textiles)
- AB glyoxal (I) [107-22-2] imparts a high degree of wrinkle resistance and smooth drying qualities to all-cotton printcloth. Evaluation of a no. of acid catalysts confirmed that Al salts were effective catalysts with Al₂(SO₄)₃ producing the least fabric discoloration. Addn. of ethylene glycol [107-21-1] or glycerol [56-81-5] to the finishing solns. eliminated almost all of the discoloration and increased the durable-press appearance ratings. The catalytic activity of Al₂(SO₄)₃ was not explained on the basis of generation of H₂SO₄ by partial hydrolysis of the Al salt. Metal ion catalysis, as well as specific catalysis by H ions may occur in the case of glyoxal crosslinking of cellulose. At ordinary concns. of I,

the durable-press treatments produced very large strength losses in the fabric, but the use of high I concns. resulted in large improvements in strength retention.

- ST durable press finishing cotton glyoxal; aluminum crosslinking catalyst cotton; ethylene glycol finishing cotton; glycerol finishing cotton; formaldehyde free finish textile
- IT Crosslinking catalysts
(metal salts, in durable-press finishing of cotton textiles with glyoxal)
- IT Textiles
(cotton, durable-press finishing of, with glyoxal)
- IT Creasing
(durable-press, of cotton textiles with glyoxal)
- IT 77-92-9, uses and miscellaneous 79-14-1, uses and miscellaneous
7446-70-0, uses and miscellaneous 7646-85-7, uses and miscellaneous
7664-38-2, uses and miscellaneous 7664-93-9, uses and miscellaneous
7681-38-1 7733-02-0 7779-88-6 7786-30-3, uses and miscellaneous
10043-01-3 10043-35-3, uses and miscellaneous 10043-67-1 12042-91-0
13530-50-2 14644-61-2
RL: CAT (Catalyst use); USES (Uses)
(crosslinking catalysts, in durable-press finishing of cotton textiles with glyoxal)
- IT 107-22-2
RL: USES (Uses)
(durable-press finishing agents, for cotton textiles)
- IT 56-81-5, uses and miscellaneous 107-21-1, uses and miscellaneous
RL: USES (Uses)
(in durable-press finishing of cotton textiles with glyoxal)
- L42 ANSWER 8 OF 12 HCAPLUS COPYRIGHT 2003 ACS
AN 1982:144377 HCAPLUS
DN 96:144377
TI Crosslinking cotton cellulose with aldehydes
AU **Frick, J. G., Jr.**; Harper, Robert J., Jr.
CS South. Reg. Res. Cent., New Orleans, LA, 70179, USA
SO Journal of Applied Polymer Science (1982), 27(3),
983-8
CODEN: JAPNAB; ISSN: 0021-8995
- DT Journal
LA English
CC 40-9 (Textiles)
- AB The effectiveness of 11 aldehydes in crosslinking cotton fabric was detd. using a pad-dry-cure treatment and immersion in acid solns. at room temp. Aldehyde effectiveness was the same in both treatments, as estd. by wrinkle recovery angle. Factors affecting crosslinking ability are discussed. Aldehydes giving the most crosslinking hydrate readily in water because the CHO group is activated or because cyclic hydrates form. For an aldehyde to crosslink cotton, it must readily form a hemiacetal with cellulose, hemiacetal formation being closely related to hydration.
- ST cotton crosslinking aldehyde; cellulose crosslinking aldehyde; hydration aldehyde crosslinking cotton; acetal aldehyde cellulose crosslinking
- IT Aldehydes, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(crosslinking of cotton by, hydration and hemiacetal formation effect on)
- IT Hydration, chemical
(of aldehydes, crosslinking of cotton in relation to)
- IT Crosslinking
(of cotton by aldehydes, hydration and hemiacetal formation effect on)
- IT Textiles
(cotton, crosslinking of, by aldehydes, hydration in relation to)
- IT Acetals
RL: FORM (Formation, nonpreparative)

- (hemi-, formation of, in crosslinking of cotton, aldehyde reactivity in relation to)
- IT 50-00-0, reactions 75-07-0, reactions 100-52-7, reactions 107-22-2
111-30-8 112-54-9 122-78-1 123-11-5, reactions 298-12-4 552-89-6
4221-03-8
- RL: RCT (Reactant); RACT (Reactant or reagent)
(crosslinking of cotton by, hydration and hemiacetal formation effect on)
- L42 ANSWER 9 OF 12 HCAPLUS COPYRIGHT 2003 ACS
AN 1981:31974 HCAPLUS
DN 94:31974
TI The determination of the degree of migration of easy-care chemicals in cotton fabrics
AU De Boer, J. J.
CS Fibre Res. Inst., TNO, Delft, 2600 AC, Neth.
SO **Textile Research Journal** (1980), 50(11), 648-54
CODEN: TRJOA9; ISSN: 0040-5175
DT Journal
LA English
CC 39-3 (Textiles)
AB A simple method based on staining with C. I. Direct Red 81 [2610-11-9] is developed to detect the migration of durable-press finishing agents, e.g. Fixapret AH (N,N'-dimethylolethyleneurea) [136-84-5] and Fixapret CPN (N,N'-dimethylol-4,5-dihydroxyethyleneurea) [1854-26-8], on cotton poplin. The effect of bleaching, scouring, and mercerization on dye absorption and color depth are discussed.
- ST finishing agent migration cotton detn; ethyleneurea deriv migration cotton; creaseproofing agent migration cotton; scouring cotton creaseproofing agent migration; mercerization cotton creaseproofing agent migration; bleaching cotton creaseproofing agent migration
- IT Creaseproofing agents
(migration of, on cotton fabrics, detn. of, by staining with C. I. Direct Red 81)
- IT Bleaching
Mercerization
(of cotton, staining techniques for detn. of creaseproofing agent migration in relation to)
- IT 136-84-5 1854-26-8
RL: USES (Uses)
(creaseproofing agents, migration of, on cotton fabrics, detn. of, by staining with C. I. Direct Red 81)
- IT 2610-11-9
RL: USES (Uses)
(in detn. of creaseproofing agent migration on cotton fabrics)
- L42 ANSWER 10 OF 12 HCAPLUS COPYRIGHT 2003 ACS
AN 1974:424585 HCAPLUS
DN 81:24585
TI Structure of aqueous glutaraldehyde
AU **Whipple, Earl B.**; Ruta, Michael
CS Union Carbide Corp., Tarrytown, NY, USA
SO **Journal of Organic Chemistry** (1974), 39(12), 1666-8
CODEN: JOCEAH; ISSN: 0022-3263
DT Journal
LA English
CC 22-2 (Physical Organic Chemistry)
AB The ¹³C NMR spectrum of aq. 25% glutaraldehyde was assigned to individual components in an equil. mixt. The soln. is shown to consist primarily of the cyclic hemiacetal, equally present in its two isomeric forms, in equil. with the free aldehyde. The ratio of these components varies

strongly with temp. Approx. 25% of the mixt. is present as the linear hemihydrate and the dihydrate in about a 2:1 ratio, this fraction being much less temp. dependent. Higher order oligomers contribute very little to the equil. mixt.

ST NMR glutaraldehyde
IT Nuclear magnetic resonance
(of carbon-13, of glutaraldehyde and its isomers)
IT 14762-74-4, properties
RL: PRP (Properties)
(NMR of, of glutaraldehyde and its isomers)
IT 111-30-8 51052-03-0
RL: PRP (Properties)
(carbon-13 NMR of)
IT 51052-04-1P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of)

L42 ANSWER 11 OF 12 HCAPLUS COPYRIGHT 2003 ACS

AN 1971:31454 HCAPLUS

DN 74:31454

TI Structure of glyoxal in water

AU **Whipple, Earl B.**

CS Tarrytown Tech. Center, Union Carbide Corp., Tarrytown, NY, USA

SO Journal of the American Chemical Society (1970), 92
(24), 7183-6

CODEN: JACSAT; ISSN: 0002-7863

DT Journal

LA English

CC 22 (Physical Organic Chemistry)

AB The PMR of aq. glyoxal shows that the principal species present at concns. <40% are the hydrated monomer and 2 dimers whose structures contain a five-membered dioxolane ring.

ST glyoxal structure water

IT Hydration, chemical
(of glyoxal)

IT Molecular structure
(of glyoxal in water)

IT 107-22-2
RL: PRP (Properties)
(structure of aq.)

L42 ANSWER 12 OF 12 HCAPLUS COPYRIGHT 2003 ACS

AN 1963:422281 HCAPLUS

DN 59:22281

OREF 59:4084f-g

TI Cellulose swelling measured by 2-propanol retention

AU **Andrews, Charles M.**; Oberg, A. G.

CS Texas Tech. Coll., Lubbock

SO **Textile Res. J.** (1963), 33, 330-2

DT Journal

LA Unavailable

CC 47 (Textiles)

AB Since 2-propanol (I) displaces the swelling agent from swollen cellulose without changing the vol. of the cellulose, the retention of the alc. offers a fast method of detg. the degree of induced swelling. E.g., 1 g. cellulose samples, soaked in H2O for 3 hrs., after removal of extraneous H2O by suction and washing with I, was soaked in anhyd. I for 15 min. The extraneous alc. was removed by suction and centrifuging at 2500 r.p.m. for 30 min. The wt. of the swollen sample was detd. at once and after 15 min. at 100-10.degree.. Reproducibility was +/- .2.5%.

IT Swelling (physical)
(detn. of, of cellulose, 2-propanol retention in)

IT 9004-34-6, Cellulose

(swelling of in alk. or neutral salt solns, detn. by 2-propanol retention)

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L1 1 S WO9429426/PN
L2 1 S KLAHORST ?/AU AND 1992/PY AND 243/SO
L3 1 S OTTER ?/AU AND 1989/PY AND (34 AND 3 AND 291)/SO
L4 221 S PAULO ?/AU
E TEXTIL/JT
L5 5700 S E96,E99-E105,E108
L6 0 S L5 AND (PAULO ? OR PURTELL ?)/AU
L7 1 S SHOOK ?/AU AND 1994/PY AND 34/SO
E SWICEGOOD/AU
L8 1 S E5
E ZIMMERMAN /AU
E ZIMMERMAN K/AU
L9 108 S E3-E35
L10 2 S L9 AND TEXTIL?/SC,SX,CW,BI,JT
E VODEBAEL AI
E VODEBAEL A/AU
E VODEBAEK/AU
E VIDEBAEK /AU
L11 4 S E22
L12 4 S L1-L3,L7

FILE 'HCAPLUS' ENTERED AT 06:32:16 ON 26 FEB 2003

E TEX/JT
E TEXT/JT
L13 3965 S E46
L14 21 S E49
L15 5937 S L5,L13,L14
E TEXTILE TECH/JT
L16 0 S L15 AND (PAULO ? OR PURTELL ?)/AU
L17 1 S L15 AND ANDREWS ?/AU AND 1963/PY AND (33 AND 330)/SO
L18 1 S L15 AND CHOI ?/AU AND 1992/PY AND (62 AND 614)/SO
L19 0 S L15 AND DEBOER ?/AU AND 1980/PY AND (50 AND 648)/SO
L20 0 S L15 AND DEBOER?/AU
L21 2 S DEBOER?/AU AND TEXTIL?/SC,SX,CW,BI,JT
L22 78 S L15 AND 1980/PY
L23 78 S L22 AND 50/SO
L24 1 S L23 AND 648/SO
L25 1 S FRICK ?/AU AND 1982/PY AND (27 AND 983)/SO
L26 1 S FRICK ?/AU AND L15 AND 1983/PY AND (53 AND 758)/SO
L27 1 S TRASK ?/AU AND 1994/PY AND (51 AND 769)/SO
L28 176 S WELCH ?/AU AND 1989/PY
L29 4 S L28 AND 21/SO
L30 0 S L29 AND 213/SO
L31 183 S WELCH ?/AU AND (TEX OR TEXT?)/SC,SX,CW,BI,JT
L32 4 S L31 AND 21/SO
L33 54 S L31 AND (TEX OR TEXT?)/JT
L34 12 S L33 AND TEXT CHEM COLOR/JT
L35 34 S L15 AND WELCH ?/AU
L36 1 S L35 AND 1982/PY AND (52 AND 149)/SO
L37 1 S L35 AND 1983/PY AND (53 AND 181)/SO
L38 1 S L35 AND 1987/PY AND (57 AND 351)/SO
L39 1 S L35 AND 1988/PY AND (58 AND 480)/SO
L40 1 S WHIPPLE ?/AU AND 1970/PY AND (92 AND 7183)/SO

L41 1 S WHIPPLE ?/AU AND 1974/PY AND (39 AND 1666)/SO
L42 12 S L17,L18,L24-L27,L36-L41

=> fil wtextile

FILE 'WTEXTILES' ENTERED AT 07:04:53 ON 26 FEB 2003

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FILE LAST UPDATED: 16 JAN 2003 <20030116/UP>

FILE COVERS 1970 TO DATE.

=> d all tot 163

L63 ANSWER 1 OF 3 WORLD TEXTILES COPYRIGHT 2003 Elsevier Science B.V.

AN 1994:1937606 WTEXTILES

TI The jeans effect comes into being

AU Videbaek T.; Fich M.; Screws G.

SO International Textile Bulletin. Dyeing/Printing/Finishing, 1994, 40(1), pp 25-29, (1994)

DT Journal; Article; (Technical Information)

LA English

AV UMIST Library

AB The use of cellulases to obtain various finishes for jeans is discussed. Cellulases are particularly suitable for stonewashing denim dyed with indigo since the dyestuff barely penetrates the fibres. Characteristics of commercial cellulases and the varied surface appearance obtainable using them are outlined. Bleaching, softening, tinting, over dyeing and treatment to obtain a peach-skin effect are described.

CT fabrics; denim; finishing; cellulase

L63 ANSWER 2 OF 3 WORLD TEXTILES COPYRIGHT 2003 Elsevier Science B.V.

AN 1993:1936178 WTEXTILES

TI Cellulase enzymes won't leave your laundry washed up

AU Zimmerman K.

CS Virkler Co., Charlotte, NC, USA.

SO Bobbin, 1993, 35(4), December, 62-68 (4 pages)., (1993)

DT Journal; Article; (Technical Information); (new work)

LA English

AV UMIST Library

AB The use of cellulase enzymes to achieve the 'broken-in' look in cotton garments resembling that produced with abrasives, eg stonewashing, is discussed. Some of the factors governing enzyme selection, e.g. environmental problems, ease of use, quality and price, are noted. The risk of indigo redeposition is reduced. Factors affecting garment strength loss are examined.

CT enzymes, cellulase; cellulase; chemical composition; garments, cotton; enzymatic degradation; appearance; fabric properties; environmental protection

L63 ANSWER 3 OF 3 WORLD TEXTILES COPYRIGHT 2003 Elsevier Science B.V.

AN 1989:8902053 WTEXTILES

TI Ester crosslinks: a route to high performance non-formaldehyde finishing of cotton

AU Welch C.M.; Andrews B.A.K.

CS SRRC.

SO Textile Chemist and Colorist, 1989, 21, No.2, February, 13-17 (5 pages)., (1989)

DT Journal; Article; (new work); (Technical Information)

LA English

AV BTTG (Shirley Institute)

AB Several polycarboxylic acids are studied as easy-care finishes on cotton fabrics and are applied by the pad-dry-cure process in the presence of alkali metal salts of phosphorus-containing inorganic acids. They compare well with DMDHEU and reduce fabric strength less. The formaldehyde-free

finishes are durable to laundering with alkaline detergents through 65 cycles. The fabrics are odourless and show an affinity for basic dyes; they are also non-yellowing in the presence of curing catalysts.

CT ADD ON; EASY CARE TREATMENTS; CATALYSIS; CROSSLINKING; FORMALDEHYDE; FORMALDEHYDE RELEASE; FABRIC PROPERTIES; CREASE RECOVERY; CREASE RECOVERY ANGLE; FABRIC STRENGTH; BREAKING STRENGTH; TEAR STRENGTH; BENDING RIGIDITY; WASHFASTNESS (OF FINISH); DYEABILITY; BASIC DYES; DYES; YELLOWING; LAUNDERING; ODOURS; COTTON; FIBRES; YARNS; WOVEN FABRICS; FABRICS; EASY CARE FABRICS; POLYCARBOXYLIC ACIDS; EASY CARE FINISHES; CATALYSTS; CHEMICAL COMPOSITION; CONCENTRATION; CURING; TIME; TEMPERATURE

=> d all tot 185

L85 ANSWER 1 OF 5 WORLD TEXTILES COPYRIGHT 2003 Elsevier Science B.V.
 AN 1974:7500368 WTEXTILES
 TI AATCC test methods
 SO AATCC Technical Manual, 1974, 50, (Part B, Section 4, 251-267), (1974)
 DT Journal; Book; Book; Standard
 LA English
 AV BTTG (Shirley Institute)
 CT **TESTING; TESTING EQUIPMENT; TEXTILE MATERIALS; BLENDS**
 (FIBROUS MATERIALS); YARNS; KNITTED FABRICS; FABRICS; WOVEN FABRICS;
 HOSIERY; NONWOVEN FABRICS; MICROBIAL RESISTANCE; ANTIMICROBIAL FINISHES;
ENZYMES; DESIZING; ANTIFUNGAL AGENTS; INSECT RESISTANCE;
 STANDARDS; USA; COTTON; LINEN; SILK; ANIMAL PROTEIN; WOOL; VEGETABLE
 CELLULOSE; REGENERATED POLYMER; ASBESTOS; SYNTHETIC; FIBRES

L85 ANSWER 2 OF 5 WORLD TEXTILES COPYRIGHT 2003 Elsevier Science B.V.
 AN 1973:7303182 WTEXTILES
 TI Determination of optimum temperatures for detergent proteases
 AU Schreiber W.
 CS HENKEL.
 SO Tenside, 1973, 10, No.2, 69-74 (5 pages), (1973)
 DT Journal; Article; (new work); (Technical Information)
 LA German
 AV British Launderers' R.A.
 CT WHITENESS RETENTION; STAIN REMOVAL; TIME; TEMPERATURE; LAUNDERING;
ENZYMES; SURFACTANTS; DETERGENCY; **TESTING**

L85 ANSWER 3 OF 5 WORLD TEXTILES COPYRIGHT 2003 Elsevier Science B.V.
 AN 1971:7103573 WTEXTILES
 TI Development of **enzyme** washing agents
 AU UEBERSCHAR K.
 CS FETTCHEMIE.
 SO Textilreinigung, 1971, No.5, 141-144 (4 pages), (1971)
 DT Journal; Article; (Technical Information)
 LA German
 AV British Launderers' R.A.
 CT SURFACTANTS; **STAIN REMOVAL**; **ENZYMES**;
LAUNDERING

L85 ANSWER 4 OF 5 WORLD TEXTILES COPYRIGHT 2003 Elsevier Science B.V.
 AN 1971:7103024 WTEXTILES
 TI Research on the use of **enzymes** for **stain** removal
 AU VAECK S.V.
 CS CENATRA.
 SO Cahiers Textiles Cenatra, 1971, No.2, 19-21, 24-25 (5 pages), (1971)
 DT Journal; Article; (Technical Information)
 LA French
 AV British Launderers' R.A.
 CT **STAIN REMOVAL**; **ENZYMES**; **LAUNDERING**;
 SURFACTANTS; MEASURING

L85 ANSWER 5 OF 5 WORLD TEXTILES COPYRIGHT 2003 Elsevier Science B.V.
AN 1970:7003510 WTEXTILES
TI A new method of determining the activity of detergent **enzymes**
directly on textile fabrics
AU JAAG H.R.; FREI A.
CS CIBA.
SO Tenside, 1970, 7, No. 2, 70-75 (6 pages), (1970)
DT Journal; Article; (Technical Information)
LA German
CT **TESTING; ENZYMES; SURFACTANTS; LAUNDERING; EFFICIENCY**
(PROCESS)

=> fil textiletech

FILE 'TEXTILETECH' ENTERED AT 07:36:58 ON 26 FEB 2003
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FILE LAST UPDATED: 5 FEB 2003 <20030205/UP>
FILE COVERS 1978 TO DATE.

=> d all

L91 ANSWER 1 OF 1 TEXTILETECH COPYRIGHT 2003 Inst. of Textile Technology
AN 618116 TEXTILETECH
DN 199806965
TI Engineered Component Cellulase for Denim.
AU **Purtell C.**; Yoon M.-Y.
CS Genencor Intern
SO Textile Technology International, : 73+, 2 pages (1998).
CODEN: TTEIEI
DT Journal
LA English
AB Genencor International developed a new type of cellulase enzyme that produces a stone washed look very close to that of pumice, but with higher abrasion contrast, reduced backstaining, less loss of fabric strength, and a broader temperature and pH profile. Researchers compared the denim washing performance of IndiAge 2XL, a commercially available conventional acid cellulase, with IndiAge MAX L, a newly engineered component cellulase that contains a subset of activities of acid stable cellulases from *Trichoderma longibrachiatum*. At the same dosage levels, IndiAge MAX L produced twice the amount of abrasion.
CC D3 Chemical finishing
SH 1910 ENZYMES: cellulase, denim, enzymes, stone wash
CT ABRASION; ACIDS; CELLULASE; CHEMICAL AIDS TO PROCESSING; COMPARISONS; COMPONENTS; DENIM; DEVELOPMENT; DOSING; ENZYMES; FABRICS; GRAPHS CHARTS; PERFORMANCE; RESEARCH; STONE WASH; STRENGTH OF MATERIALS; TEMPERATURE; TEXTILE RESEARCH; WASHING

=> fil textiletech

FILE 'TEXTILETECH' ENTERED AT 07:54:41 ON 26 FEB 2003
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FILE LAST UPDATED: 5 FEB 2003 <20030205/UP>
FILE COVERS 1978 TO DATE.

=> d all tot 1118

L118 ANSWER 1 OF 2 TEXTILETECH COPYRIGHT 2003 Inst. of Textile Technology
AN 645440 TEXTILETECH
DN 200105489

- TI Standard Guide for Evaluating Stain Removal Performance in Home Laundering.
- SO ASTM Standards on Color and Appearance Measurement, : 170+, 6 pages (2000). Reference(s): 2 refs.
- DT Journal
- LA English
- NTE ITT Cat. No. TA 418.5 .A44 2000.
- AB The ASTM D 4265-98 guide for evaluating stain removal performance in home laundering recommends several staining agents that are representative of stains commonly treated in home laundering, including tea, grass, pen ink, motor oil, blood, and soil. The evaluations act as diagnostic screening tests for detergent formulation studies, quality control, and raw material classification. Procedures for designing test protocols address **fixed** test conditions, laundering machine requirements, machine settings, water properties, temperature, fabric load, detergent concentrations, pretreatments, and visual evaluations.
- CC F4 End products
- SH 4570 STAINS: ASTM, ASTM Standards on Color and Appearance Measurement 2000, detergents, formulations, home laundering, laundering machines, materials testing, performance, pretreatments, recommendations, stain removal, standards
- CT CLASSIFICATION; CONCENTRATION COMPOSITION; CONTROL; DESIGN; DETERGENTS; EQUATIONS; EVALUATION; FABRIC DESIGN; FABRIC PROPERTIES; FABRICS; FORMULATIONS; HOME LAUNDERING; INKS; LAUNDERING; LAUNDERING MACHINES; MACHINERY; MATERIALS TESTING; OILS; PERFORMANCE; PRETREATMENTS; PROCEDURES; PROPERTIES; QUALITY; QUALITY CONTROL; RAW MATERIALS; RECOMMENDATIONS; REMOVAL; REQUIREMENTS; SETTINGS ADJUSTMENTS; SOIL REMOVAL; SOILS; **STAINS**; STANDARDS; STUDIES; TABLES DATA; TEMPERATURE; TESTING; TESTING MACHINES; TEXTILE MACHINES; VISUAL EVALUATION; WASHING; WATER
- L118 ANSWER 2 OF 2 TEXTILETECH COPYRIGHT 2003 Inst. of Textile Technology
- AN 579979 TEXTILETECH
- DN 199407279
- TI **Fixing** Odors to Textiles.
- SO High Performance Textiles, : 7-8 (Aug. 1994).
CODEN: HPTEDM
- DT Journal
- LA English
- AB Matsui Shikiso Chemical Company has developed a technique to **fix** large numbers of perfume containing microcapsules to fabric. The objective was to develop new types of fabric that emit scents, particularly fragrances that are relaxing or that contribute to a particular ambience. Microencapsulation can be achieved through chemical and interfacial polymerization, in situ polymerization, and in liquid-set coatings. Unlike conventional methods, in which a pigment print based on synthetic resin paste was supplemented with perfume, the microcapsules release fragrances over a long period of time without staining the fabric base. Matsui Shikiso contends that the microcapsules can be attached to any natural or synthetic fabric without affecting its appearance or hand. The process bears European patent number 0,581,274.
- CC C4 Special fabric production methods
- SH 1980 FABRIC MANUFACTURING: microencapsulation. Matsui Shikiso process **fixes** perfumes on fabric without affecting appearance, hand
- CT ADDITION POLYMERS; APPEARANCE; EUROPE; FABRIC MANUFACTURE; FABRICS; INTERFACIAL POLYMERIZATION; LIQUIDS; NATURAL FABRICS; ODORS; PATENTS; PIGMENTS; PLASTICS; POLYMERIZATION; POLYMERS; PRINTS; RESINS; SETTING; **STAINS**; TEXTILE CHEMICALS

=> d his

(FILE 'HOME' ENTERED AT 06:25:07 ON 26 FEB 2003)

SET COST OFF

FILE 'HCAPLUS' ENTERED AT 06:25:25 ON 26 FEB 2003

L1 1 S WO9429426/PN
 L2 1 S KLAHORST ?/AU AND 1992/PY AND 243/SO
 L3 1 S OTTER ?/AU AND 1989/PY AND (34 AND 3 AND 291)/SO
 L4 221 S PAULO ?/AU
 E TEXTIL/JT
 L5 5700 S E96,E99-E105,E108
 L6 0 S L5 AND (PAULO ? OR PURTELL ?)/AU
 L7 1 S SHOOK ?/AU AND 1994/PY AND 34/SO
 E SWICEGOOD/AU
 L8 1 S E5
 E ZIMMERMAN /AU
 E ZIMMERMAN K/AU
 L9 108 S E3-E35
 L10 2 S L9 AND TEXTIL?/SC,SX,CW,BI,JT
 E VODEBAEL AI
 E VODEBAEL A/AU
 E VODEBAEK/AU
 E VIDEBAEK /AU
 L11 4 S E22
 L12 4 S L1-L3,L7

FILE 'HCAPLUS' ENTERED AT 06:32:16 ON 26 FEB 2003

E TEX/JT
 E TEXT/JT
 L13 3965 S E46
 L14 21 S E49
 L15 5937 S L5,L13,L14
 E TEXTILE TECH/JT
 L16 0 S L15 AND (PAULO ? OR PURTELL ?)/AU
 L17 1 S L15 AND ANDREWS ?/AU AND 1963/PY AND (33 AND 330)/SO
 L18 1 S L15 AND CHOI ?/AU AND 1992/PY AND (62 AND 614)/SO
 L19 0 S L15 AND DEBOER ?/AU AND 1980/PY AND (50 AND 648)/SO
 L20 0 S L15 AND DEBOER?/AU
 L21 2 S DEBOER?/AU AND TEXTIL?/SC,SX,CW,BI,JT
 L22 78 S L15 AND 1980/PY
 L23 78 S L22 AND 50/SO
 L24 1 S L23 AND 648/SO
 L25 1 S FRICK ?/AU AND 1982/PY AND (27 AND 983)/SO
 L26 1 S FRICK ?/AU AND L15 AND 1983/PY AND (53 AND 758)/SO
 L27 1 S TRASK ?/AU AND 1994/PY AND (51 AND 769)/SO
 L28 176 S WELCH ?/AU AND 1989/PY
 L29 4 S L28 AND 21/SO
 L30 0 S L29 AND 213/SO
 L31 183 S WELCH ?/AU AND (TEX OR TEXT?)/SC,SX,CW,BI,JT
 L32 4 S L31 AND 21/SO
 L33 54 S L31 AND (TEX OR TEXT?)/JT
 L34 12 S L33 AND TEXT CHEM COLOR/JT
 L35 34 S L15 AND WELCH ?/AU
 L36 1 S L35 AND 1982/PY AND (52 AND 149)/SO
 L37 1 S L35 AND 1983/PY AND (53 AND 181)/SO
 L38 1 S L35 AND 1987/PY AND (57 AND 351)/SO
 L39 1 S L35 AND 1988/PY AND (58 AND 480)/SO
 L40 1 S WHIPPLE ?/AU AND 1970/PY AND (92 AND 7183)/SO
 L41 1 S WHIPPLE ?/AU AND 1974/PY AND (39 AND 1666)/SO
 L42 12 S L17,L18,L24-L27,L36-L41

FILE 'WTEXTILES' ENTERED AT 06:46:27 ON 26 FEB 2003

L43 167 S CHOI ?/AU
 L44 5 S L43 AND 1995/PY
 E J APPL/JT

L45 17 S E12 AND CHOI ?/AU
 L46 1 S PAULO ?/AU
 L47 5 S PURTELL ?/AU
 L48 1 S SHOOK ?/AU
 L49 0 S SWICEGOOD ?/AU
 L50 5 S VIDEBAEK ?/AU
 SEL AN 3
 L51 1 S E1 AND L50
 E ZIMMERMAN /AU
 L52 3 S E16,E17
 L53 1 S L52 AND BOBBIN/SO
 L54 92 S WELCH ?/AU
 L55 0 S L54 AND 1989/PY AND (21 AND 213)/SO
 L56 2 S L54 AND 1989/PY
 SEL AN 2
 L57 1 S L56 AND E1
 E TRIPP /AU
 L58 19 S E7
 SEL AN 10 11
 L59 2 S L58 AND E1-E2
 E PAVIA /AU
 E HATAKEYAMA /AU
 L60 51 S E7
 L61 2 S L60 AND 1994/PY
 L62 37 S L60 AND THERM?
 L63 3 S L51,L53,L57

FILE 'WTEXTILES' ENTERED AT 07:04:53 ON 26 FEB 2003

FILE 'REGISTRY' ENTERED AT 07:05:13 ON 26 FEB 2003

L64 1 S 111-30-8
 SEL CHEM

FILE 'WTEXTILES' ENTERED AT 07:05:28 ON 26 FEB 2003

L65 47 S E1-E42
 SEL AN 20 37 38 39 42 43 44 45 46 47
 L66 10 S L65 AND E43-E52
 E LAUNDER/CT
 L67 3844 S LAUNDER?/CT
 E CLEAN/CT
 L68 1958 S CLEAN?/CT
 E DETERG/CT
 L69 439 S DETERG?/CT
 E SOAP/CT
 L70 147 S E4,E5
 E SURFACE/CT
 L71 374 S E37-E58
 L72 6364 S L67-L71
 L73 134 S L72 AND ENZYM?
 E ASSAY/CT
 L74 34 S L73 AND (STAIN? OR DESTAIN? OR ANTISTAIN? OR SPOT?)
 E STAIN/CT
 L75 1088 S E3-E40
 E DESTAIN/CT
 E ANTISTAIN/CT
 E ANTI-STAIN/CT
 L76 28 S L75 AND L73
 L77 34 S L74,L76
 SEL AN 33 34
 L78 2 S L77 AND E1-E2
 E TEST/CT
 L79 7721 S E5,E9,E10
 L80 36 S L79 AND ENZYM?

L81 0 S E273-E276 AND ENZYM?
L82 41 S TEST?/CT AND ENZYM?
L83 41 S L80,L82
SEL AN 39-41
L84 3 S L83 AND E1-E3
L85 5 S L78,L84
E SCHELLENBERGER/AU
E NAKI D/AU
E COLLIER K/AU
L86 4 S E3,E4
E KELLIS J/AU
L87 4 S E3-E5
E NADHERNY J/AU
E GENECOR/CS
L88 1 S E3,E4
L89 9 S L86-L88

FILE 'TEXTILETECH' ENTERED AT 07:33:26 ON 26 FEB 2003

E PAULO /AU
E PURTELL/AU
L90 9 S E4,E5
SEL AN 3
L91 1 S L90 AND E1

FILE 'TEXTILETECH' ENTERED AT 07:36:58 ON 26 FEB 2003

L92 1339 S ENZYM?/SH
E A/CC
E ENZYM/CT
L93 2001 S E4
E ENZYM/CW
L94 2001 S E4
L95 2103 S ENZYM?
L96 2015 S L92-L94
L97 54 S L65
L98 11 S L96 AND L97
E ASSAY/CT
E ASSAY/SH
L99 5 S E3,E4
E EVALUATION/CT
E EVALUATION/CT
L100 10434 S E2-E5
E EVALUATION/CW
L101 11768 S E2-E5
E TEST/CW
L102 29972 S E3-E6
E EXPERIMENT/CW
E EXPERIM/CW
L103 25597 S E4-E12
L104 674 S L96 AND L99-L103
L105 38 S L95 AND ASSAY?
L106 449 S L95 AND METHOD?
L107 168 S L106 AND L104-L105
E STAIN/CW
L108 1845 S E4-E6
E ANTISTAIN/CW
E DESTAIN/CW
E DESPOT/CW
L109 5 S L107 AND L108
L110 1031 S (PERFORM? OR PROCEDUR? OR RESEARCH?) AND L96
L111 29 S L110 AND L108
E SCJE
E SCHELLENBERGER/AU

L112 E GENECOR/CS
 4 S E3-E5
 E GENECOR/PA
L113 52 S L93 AND FIX?
L114 43 S L97 NOT L98
L115 55 S L108 AND FIX?
L116 51 S L115 NOT L113
L117 27 S L116 NOT (FIXATION DYES)/CT
 SEL AN 5 20
L118 2 S L117 AND E1-E2

FILE 'TEXTILETECH' ENTERED AT 07:54:41 ON 26 FEB 2003

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Search Results - Record(s) 1 through 3 of 3 returned.☐ 1. Document ID: US 20020127695 A1

L2: Entry 1 of 3

File: PGPB

Sep 12, 2002

PGPUB-DOCUMENT-NUMBER: 20020127695

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020127695 A1

TITLE: Chemically modified enzymes with multiple charged variants

PUBLICATION-DATE: September 12, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Davis, Benjamin G.	Durham	CA	GB	
Jones, John Bryan	Lakefield		CA	
Bott, Richard R.	Burlingame		US	

US-CL-CURRENT: 435/226; 435/219, 435/320.1, 435/325, 435/69.1, 536/23.2

ABSTRACT:

This invention provides modified enzymes comprising one or more amino acid residues replaced by cysteine residues, where the cysteine residues are modified by replacing the thiol hydrogen in the cysteine residues with a substituent group providing a thiol side chain comprising a multiply charged moiety. The enzymes show improved interaction and/or specificity and/or activity with charged substrates.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC
Draw Desc	Image										

☐ 2. Document ID: US 6379942 B1

L2: Entry 2 of 3

File: USPT

Apr 30, 2002

US-PAT-NO: 6379942

DOCUMENT-IDENTIFIER: US 6379942 B1

TITLE: Chemically modified enzymes with multiple charged variants

DATE-ISSUED: April 30, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Davis; Benjamin G.	Durham			GB
Jones; John Bryan	Lakefield			CA
Bott; Richard R.	Burlingame	CA		

US-CL-CURRENT: 435/221; 510/392

ABSTRACT:

This invention provides modified enzymes comprising one or more amino acid residues replaced by cysteine residues, where the cysteine residues are modified by replacing the thiol hydrogen in the cysteine residues with a substituent group providing a thiol side chain comprising a multiply charged moiety. The enzymes show improved interaction and/or specificity and/or activity with charged substrates.

21 Claims, 17 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 11

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC
Draw Desc	Image										

☐ 3. Document ID: US 5800755 A

L2: Entry 3 of 3

File: USPT

Sep 1, 1998

US-PAT-NO: 5800755

DOCUMENT-IDENTIFIER: US 5800755 A

TITLE: Agglomerated active with controlled release

DATE-ISSUED: September 1, 1998

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Withenshaw; John David	Northop			GB
Chadwick; Mark Ardern	Greenfield			GB
Wilson; William John	Wirral			GB

US-CL-CURRENT: 264/117; 252/186.25, 252/186.38, 264/118

ABSTRACT:

An agglomerated active with controlled release comprising a particulate solid active material and a binder characterised in that the binder comprises from 0.02 to 5% by weight of a polyvinyl alcohol, based on the total weight of the agglomerate. The binder system simultaneously provides the desired hardness and release characteristics while maintaining a high level of actives. The active may be a bleach activator such as Tetraacetythylenediamine.

A process for manufacturing the agglomerate comprises the steps of mixing a particulate solid active material and optionally a portion of polyvinyl alcohol and optionally also a co-binder and then adding an agglomerating solution which optionally contains polyvinyl alcohol binder while mixing and agglomerating and drying the agglomerates to obtain an agglomerate with average particle size in the range 1-2000 microns wherein the agglomerate comprises from 0.02 to 5% by weight based on the total weight of the agglomerate of polyvinyl alcohol.

18 Claims, 0 Drawing figures

Exemplary Claim Number: 1

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWC
Draw Desc	Image										

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Term	Documents
STAIN.DWPI,TDBD,EPAB,JPAB,USPT,PGPB.	64311
STAINS.DWPI,TDBD,EPAB,JPAB,USPT,PGPB.	30127
FIX\$	0
FIX.DWPI,TDBD,EPAB,JPAB,USPT,PGPB.	507277
FIXA.DWPI,TDBD,EPAB,JPAB,USPT,PGPB.	142
FIXAATION.DWPI,TDBD,EPAB,JPAB,USPT,PGPB.	1
FIXAB.DWPI,TDBD,EPAB,JPAB,USPT,PGPB.	2
FIXABC.DWPI,TDBD,EPAB,JPAB,USPT,PGPB.	1
FIXABCX.DWPI,TDBD,EPAB,JPAB,USPT,PGPB.	3
FIXABLDWPI,TDBD,EPAB,JPAB,USPT,PGPB.	5
FIXABILITY.DWPI,TDBD,EPAB,JPAB,USPT,PGPB.	3
(L1 AND FIX\$ STAIN).USPT,PGPB,JPAB,EPAB,DWPI,TDBD.	3

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